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THE CONQUEST OF BRAIN MYSTERIES

by

GEORGE BANKOFF,
M.D., F.R.C.S.



This is the sixth and final volume in *The Conquest Series*, expressly designed and written to explain some of the wonders of modern medical science in terms that are readily understood—and enjoyed—by the layman. “Because of the wonderful things of which the human brain is capable,” Dr. Bankoff writes, “one is compelled to think that the layman would be interested to know some of the capabilities of his brain. That is the reason for the appearance of this book.”

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The Conquest Series No. 6

THE CONQUEST
OF BRAIN MYSTERIES

GEORGE BANKOFF, M.D., F.R.C.S.

THE CONQUEST OF BRAIN MYSTERIES

Story and Secrets of the Human Mind



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CONTENTS

CHAPTER	PAGE
PROLOGUE	9
I. WHAT IS BRAIN?	12
II. THE BRAIN AT WORK	26
III. THE MIND IN DISARRAY	39
IV. PSYCHIATRY IN ACTION	51
V. SURGERY OF THE BRAIN	60
VI. REVOLUTION IN PSYCHOLOGY	71
VII. THE DISCOVERY OF THE UNCONSCIOUS	82
VIII. DISSECTING THE MIND	96
IX. NEW IDEAS OF THE MIND	108
X. THE UNCONSCIOUS AND THE NORMAL	123
XI. TYPES AND TEMPERAMENT	137
XII. WHAT IS PERSONALITY?	145
XIII. BEYOND THE MIND	155
XIV. TODAY AND TOMORROW	163
EPILOGUE	170
INDEX	173

LIST OF ILLUSTRATIONS

	<i>Facing page</i>
Professor S. Ramon Y. Cajal	16
Diagram: Location of Human Feelings in Brain	
Areas	17
"The Retreat" near York	32
Nerve Cells of the Brain	33
Nerve Cells of the Brain	80
Microphotograph of the Spinal Cord	81
Grafting of Nerves	96
Restoration of Cut Motor Nerves	97

THE CONQUEST OF BRAIN MYSTERIES

PROLOGUE

WHAT IS the mystery behind the most wonderful and complex organ of the human body—the brain? Are clever people endowed with a larger brain, of more complicated structure and folds, than the average person? On the other hand, are the feeble-minded and mad people's brains differently constructed? All these questions and more, the layman is bound to ask himself time and again when he hears of the wonderful work that has been done by scientists on this hidden organ.

Some years ago, upon the death of Anatole France, the great French philosopher and poet, it was found that he had bequeathed his body and brain to the Medical School in Paris. The pathologist then at the University of Paris was overjoyed at the opportunity of dissecting and analysing the brain of such a great man. A whole treatise was published on the wonderful structure of the brain that made Anatole France one of the greatest poets of modern times. Anatomically, it was found that his brain weighed 250 grammes—over 8 ounces—more than the brain of the average individual. Further, of the three structures that form the brain, the hemisphere—the intellectual part—was twice as big as the other two. The folds and grooves that are normally found in the human brain were seen to be bigger, more complicated and more contorted. Here was the solution to the problem, thought

the pathologist, and he decided to deliver a lecture on this particular brain.

The auditorium was filled with awe-inspired doctors and scientists, marvelling at the wonders of human nature. The lecture was at an end and the audience about to depart, when a young doctor brought a large jar with another specimen of human brain for the next lecturer. When the pathologist glanced fleetingly in the direction of the jar, he noticed the similarity in size and structure of the brain with that of Anatole France's. In a moment of inspiration, he stopped the departing audience and showed them the new brain. "Gentlemen," he said, "here we have another specimen which, although I do not know the history, no doubt belongs if not to another genius to a man above the average intelligence."

An impromptu lecture of a few minutes was delivered, comparing the two brains. Then the pathologist decided to ask the house-surgeon, who had been standing on pins and needles during the oration, "Well, young man, can you tell me the history of this brain?" "Yes, sir," answered the embarrassed young medico, "it belonged to an inmate of the asylum. The only history we have is that the man was mad for the last fifteen years." One is left to guess the embarrassment of the professor, but that showed once and for all that no two brains can be judged alike from their outward appearance.

In later years the human brain was dissected from other aspects, and many insane people whose minds were disarrayed were found to be curable. Diseases such as schizophrenia—dual personality—often did not reveal any changes in the structure of the brain; hence theories were evolved that the brain possessed electric charges, the disturbance of whose fuses can produce mental storms. Then came Freud with his ingenious interpretation of dreams and what happens in the mind during waking and sleeping

hours. This work was crowned with the discovery of the unconscious and Freud's sexual theories, which he claimed to be the basis of practically all human activities. Thus the new science, psychoanalysis, sprung into being, and men who before were considered lunatics and neurotics, and whose books were banned by law, such as those of Havelock Ellis, were proclaimed scientists and given their place among the forerunners of science and medicine.

Because of the wonderful things of which the human brain is capable, one is compelled to think that the layman would be interested to know some of the capabilities of his brain. That is the reason for the appearance of this book. While it does not claim any scientific status, it has been written in a simple style with the sincere conviction that it might prove beneficial not only in knowledge but also useful entertainment in hours of gloom and despondency.

CHAPTER I

WHAT IS BRAIN?

MAN is man because of his brain. It is his powers of rational thought and imagination, of ability to learn and profit by experience, that have given him his unique place in the terrestrial world. The story of man's evolution is usually written as a chronicle of the growth and development of the human brain.

Today, those statements seem commonplace and are accepted without reserve. In the days before the scientific theory of evolution had gained general acceptance, and even eminent scientists were prepared to uphold the old theological doctrine that man was a separate and distinct creation from the rest of the animal world, the marvel of the human brain—amounting almost to a narcissistic pride—was even more stressed. Yet the plain statements beg a good many questions. Their apparent self-evidence, like that of so many generally accepted popularizations of scientific knowledge, hides a number of pitfalls if we are to see the question clearly.

Behind all such assertions is the unanswered problem: What is brain? As soon as that question is examined, the matter does not appear so simple or clear-cut. Brain may, it is true, be defined with some exactitude in anatomical terms; books can be written describing in minute detail the structure of the brain. Yet all of these together do not really answer the question "what is brain?" They are descriptions of observations—and no more. They do not tell us what brain is any more than a list of parts tells us what a wireless set is, or a motor car.

Today we are not so vain about our brains. Comparative studies of the behaviour of animals and particularly of the way in which they think and act have made us realize that there is nothing distinctively different about a human brain. We do not see it as something specially created. We know that apes and monkeys *think*—they learn and even solve problems. So, too, do animals that are lower in the scale. A dog can be trained to perform quite complicated tasks. As we descend lower and lower, the same pattern can be detected, though in an ever simpler form. At last we are forced to the conclusion that the uniqueness of the human brain and its powers is one of degree, not kind. It is, as the scientist says, a quantitative difference not a qualitative one. This may be discouraging and even depressing to those who like to think of man in general and themselves in particular as lords of creation, specially planned and destined for their special role. It is also—and more profitably—a conception which integrates man with the rest of the natural world, making him part of the grand design of Nature.

We know now that there is an infinite gradation between the highly complex, controlled behaviour of men and the purely automatic reactions to environment of the simplest single-celled animals like the classical amoeba. At the top end of the scale, surmounted by man himself, the automatic reaction is obscured by some form of mental control; at the lowest rung of the ladder there is automatic reaction alone. Man's brain, therefore, is, like man's eyes and man's hands, the end product of a long process of development and refinement. It is, in fact, the interplay of the brain, hands, and eyes, that has promoted the progress of man from his remote tarsier-like ancestors to his present state. The bright, forward-looking eyes brought more vivid messages to the small brain and stimulated the latter's growth. This developing brain,

in turn, made better use of the eyes. So with the hands; and this trinity brought in time an animal quite new in its relationship to its environment. For, whereas other creatures established themselves by bodily specialization to certain conditions or ways of life—as, for example, the strong claws, keen eyes, and athletic speed of the cat family—man and his relations, both ancestral and contemporary, found a way of controlling themselves so that they could adapt themselves readily, to their environment. They replaced bodily efficiency by mental alertness and introduced a new design into the general pattern of life.

In the simplest animals, reaction to environment is mainly a matter of physical and chemical stimulus. The most primitive of all consist of a single cell floating in water; when some part of this cell comes in contact with a substance, a chemical reaction causes either the whole cell to “flow” round the substance if it is edible, or to reject it if it is not. This is direct response to environment at the lowest level, and it is interesting to note that some authorities see in it the origin of the hormone mechanism in the body, discussed in a previous volume in this series.

At a somewhat higher level in the animal kingdom, a nervous system has been developed. A single nerve axis or trunk runs up the body and branch nerves connect this to the various parts of the body. The pattern of the basis of the advanced nervous system of man has already been determined. There is here the “neuronic arc”—that is to say, there is a receptor nerve, which receives impressions, and an effector nerve, which provides the reaction to the impression or stimulus. But here again the reflex is entirely automatic. Stimulus is immediately followed by reaction, whether of acceptance or withdrawal. Here, again, is the outline of the automatic nervous system of the higher animals, where many

reactions remain immediate and determined: e.g., the hand is immediately withdrawn from a flame with which it comes in contact.

Still higher in the scale, certain of these nervous arcs merge together into nodules or ganglia; and it is here that the true brain, in the physical sense, may be said to begin. The function of these ganglia is to co-ordinate the action of the various nerves and to cause the body to act as a whole. In these animals a definite nerve centre has been formed, and the seed that is to flower into the human brain has been sown. In a later stage the ganglia are three in number, forerunners of the fore, mid, and hind brains of the higher animals, but reaction remains automatic. A given stimulus produces an instantaneous response of a fixed type. Nothing of any kind that could be called intelligence or reflection occurs.

In these primitive brains, the chief sense is smell, and this is associated with the forebrain. The animal reacts to light but only automatically, and there is nothing akin to vision as we know it. From smell, touch developed, since the nose, in receiving the smell stimuli, was often brought in contact with objects. The association of keen sense of smell and sensitive nose to touch, as in the dog, is still retained even in higher animals.

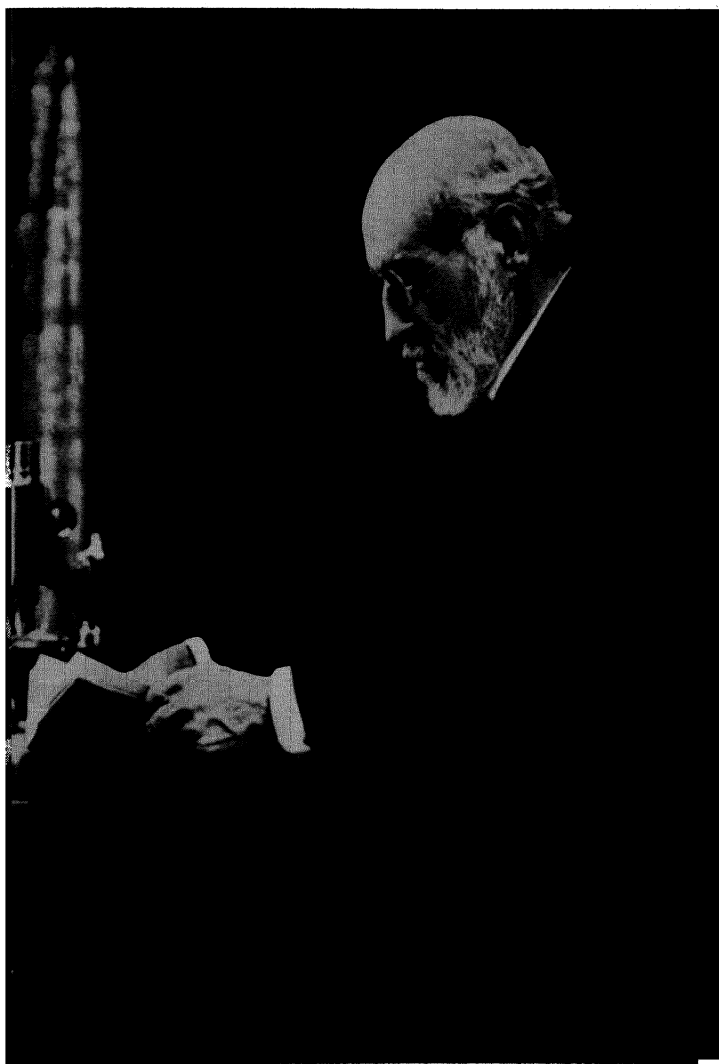
As the animal's world of stimuli extended, so its brain grew by the addition of new centres, and in the reptiles there is already a fairly well developed departmentalization of the brain, the various nerves of the same kind all leading to one particular centre of the forebrain. The predominance of smell was threatened, if only slightly, and greater integration of action and behaviour became possible.

From this point, the evolution of brain is rapid. More and more sense concentrates on the front surface of the forebrain, and greater receptivity and response are

engendered. The neopallium, or true forebrain, has come into being. Memory and dim intelligence have developed, and with them the old immediate response died. It was still predominant and so remains in all but the highest animals, but as the brain grew so the possibility of delayed action increased. Instead of obeying a stimulus automatically, the animal was able, as it were, to test the stimulus against its memory or experience of previous stimuli of the same or a similar kind—and act accordingly. In man, this delayed action which gives opportunity for reflection has reached its highest point and is the root of intelligent behaviour.

The curious feature of this growth of brain in the physical sense is that the higher centres are always pushed forward—a process known scientifically as telencephalization—into a new end brain. This term “end brain” is frequently used, but is misleading, for it means simply the latest added and highest level, which obviously is not the same for a jellyfish, a lizard, and a man. Each new end brain takes over control of all that has been previously developed, and more and more stimuli are thus referred to a higher controlling authority.

Perhaps it may make this process more easy to understand by giving a social analogy. In primitive societies, a man works on his own, solving his own problems in his own crude way as best he can. At a little later stage, certain problems are referred to an elder of riper experience and wider knowledge. In turn, the authority of this elder is subjected to the higher control of a council, then to a king, and finally we have the highly complex organization of the modern state. But the old levels of authority are not entirely swept away and power centralized. The individual retains certain responsibilities; local authorities have their own field; departments work in some things almost independently. But the whole is—or can be—



Prof. S. Ramon Y Cajal.
Nobel Prize Winner for his work on the brain function.

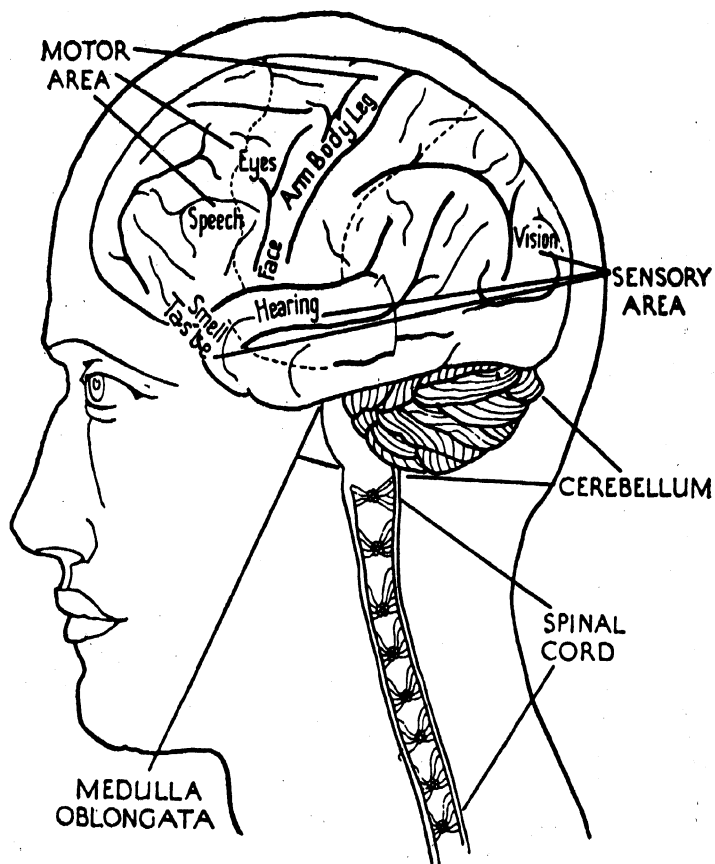


Diagram to illustrate the location of human feelings in the brain areas.

referred to the final authority of a parliament and, in the last resort, a General Election. This is only a crude analogy, but it may serve to show that the development of a new end brain does not render the earlier mechanisms redundant; it merely makes their actions subject to a higher review and authority, which may or may not be called upon in any specific circumstances.

The foregoing gives a very sketchy outline of the evolution of the brain as a physical entity, but even so it does indicate some important points. Yet it does not answer the question we set out to investigate: What is brain?

If brain in the true sense is the organ that gives intelligence of however low a degree to an animal's activities, then perhaps it may be said to begin at the stage when the so-called period of latency becomes apparent—that is, when the response to stimuli is not always immediate and automatic. This is the phase at which the stimuli are referred to the memory and experience of the creature and hence to a rudimentary form of judgment. But it is a fine distinction, even with anatomical evidence available, always to decide where this level lies.

The main lesson of this brief excursion into evolution and comparative anatomy is that the human brain is materially the same as the brains and pseudo brains of the rest of the animal world. There is an unbroken sequence from the amoeba with its chemically and physically operated reactions to the intelligent behaviour of apes and men, and the entire nervous mechanisms of the latter are not simply a growth and development of elementary systems, but actually retain those systems within themselves. The difference between the brain of a lowly placed mammal, such as a mouse, and that of a man, even if he be a genius, is simply one of complexity and degree. Essentially the two are the same.

From this standpoint, it is possible to develop a purely mechanical and biophysical theory of brain and mind. I have avoided that word "mind" till now, because of its confused associations and in the past has been more philosophic than scientific. When it was believed that the thought processes of man were something quite distinct from the mental workings of all other animals, then a mechanistic explanation was avoided. Philosophers sought to find an explanation for the workings of their brains by "introspection"—or professing to stand aside from themselves, as it were, and watch themselves thinking and acting. From the time of Ancient Greece onwards, innumerable speculative theories of "mind" have been proposed and additions are still being made to their number. In very many cases these theories are merely elaborations and restatements in more up-to-date language of systems first proposed much earlier in the world's histories.

These philosophies are tinged by a more or less mystical colour and either openly or tacitly accept that there is some part or principle in man which is incapable of scientific detection by observation, experiment or analysis. Whether this is so it is not the purpose of this book to discuss. It is one of those unending problems that perhaps will never be elucidated.

Yet, for all that, these philosophical speculations are important for a scientific study of brain and mind because they had poisoned the whole stream of thought. Their unscientific nature biased the scientific investigator against them and impelled him to seek refuge in purely mechanistic pictures of brain and mind. In physics and other sciences there has been in recent years something of a partial retreat from purely mechanistic pictures—as witness, modern atomic theory—and there is no reason why physiological and biological science should be exempt from this trend—except that the biological

sciences generally tend to lag behind the physical sciences in their outlook.

It is now possible and plausible to offer a complete explanation of mental working in man and animals alike by nervous action alone. It has been done brilliantly by a number of medical writers. Undoubtedly these explanations are very near to the truth, and what creates a certain doubt and does tend to invalidate them is not any discrepancies or internal fallacies but their grim determination to keep out all other explanations and factors. According to these theories, *all* mental processes are the result of a nervous action of which the prototype is the simple receptor-effector arc. Memory, imagination, intelligence, and all the higher attributes of the brain are held to be elaborations of this mechanism. These authorities claim that psychology is a mere department of brain physiology, and that psychological states cannot be considered apart from the chemistry and physics of the nerves. Hence, even modern scientific systems of psychology, such as that of Freud, are dismissed as a whole and summarily. Extreme positions such as this are always suspect in science unless they are shown to be unassailable.

It may be noted that even the upholders of these purely mechanistic theories admit that there is a lot still unexplainable, and they make use of something called "nervous" or "psychic energy" which they admit they cannot define. Where they break down is that they fail to see that modern psychology and psychiatry do not seek to deny the materialistic basis of mental activity, but merely to explain what the mechanists admit they cannot explain: the origin and operation of this same psychic energy.

Knowledge today—by which is meant scientific knowledge based on experiment and observation—is not

sufficiently advanced for anyone to be able to explain completely either brain or mind. The mechanistic picture alone is, frankly, unsatisfactory, because most medical men who have had anything to do with psychological cases know that it is incomplete. On the other hand, purely psychological explanations in terms of unknown and unverifiable forces are even less satisfactory. As always, the truth probably lies somewhere between the two extremes, but nearer to the mechanistic side.

Let us take an example to show this point more clearly and practically. The mechanists, as I call them for convenience, assert that all disorders of the mind are due to disturbances of one kind or another in the multiplicity of the neuronics arcs in the brain. A man is deranged, they say, because he has fewer than the normal number of these arcs, or paths of nervous energy, or the conducting fibres are faulty, so some at least of the energy goes astray. Therefore, they contend, no amount of psychotherapy or suggestion will give that man what he has lost or never possessed.

That is certainly true of a good many mental conditions. Nothing can convert a microcephalic idiot, whose brain is smaller than that of a normal newborn infant, into an average man. But also there are many cases, as every psychiatrist knows, that can be treated successfully by the very methods that the mechanistic dismiss as shams, and without any physical treatment at all. It looks therefore as though the extreme mechanistic picture is a little distorted. Nor is the conflict made any simpler by answering, "Yes. But, then, we don't know all about the physiology of the brain—far from it. When we do, we shall find that all derangements are due to these physical breakdowns." That still does not explain why procedures that are in themselves entirely non-physical, that replace no "missing parts", and repair no damaged

cells or nerves, produce results that are sometimes astonishing.

In the last twenty years, in fact, one of the most surprising lessons learnt in medicine is the immense importance of psychological factors in many conditions that superficially have nothing psychological about them. Cases incurable by physical means can now be made to yield to the methods of the psychiatrist, who, for his part, is paying greater and greater attention to physical causation of mental symptoms.

The dividing line between the physical and psychological ailment is, indeed, extremely difficult to draw. Some psychologically deranged states, often of an extreme kind, are demonstrably due to physical disorders, notably those of the endocrine glands, and their cure or alleviation can be attained only by physical methods, sometimes surgical intervention. On the other hand, there are certain physical symptoms which resist all the resources of medicine and surgery yet yield with comparative ease to the psychiatrist. It is only within recent years that this remarkable interdependence has been fully recognized, but now that it has, striking progress has been made and more will be made in the future.

There is every reason to regard the whole human entity as an integration of mind and body and to dismiss the old dichotomy between the two as untenable. For this reason alone, both the materialist (or mechanistic) and the purely psychological schools of thought are almost certainly wrong in themselves. Each has within it more than a grain of truth, and eventually, as knowledge advances, some deeper underlying principle will probably be found to unify the two and show that what at present seem to be irreconcilables are really parts of a single, coherent whole. Those who contend so hotly that there is truth in one school only do science a disservice and

impede practical progress. In matters of the mind, the doctor, as in other spheres, cannot tie himself down to one particular set of theories. His aim is to serve humanity and his first criterion must always be pragmatic.

How, then, shall we answer the question, what is brain? Let us admit frankly that it is a question to which, as yet, we have no answer, any more than we have to the greater question, which includes this lesser one, what is life? Just as in modern research it is now recognized that there is really no dividing barrier between the "living" and the "non-living" and that the old classical duality of life and the inert is a fallacy—the virus sometimes behaves as "living", sometimes as "not living"—so in matters of the mind there is an infinite gradation that commences with relatively simple and easily recognized chemical and physical reactions and ends with the intricate processes of the human mind. At what point in this series brain—or mind, if that term is preferred—begins, we cannot say.

Life can be recognized by certain properties, yet in the virus there is doubt whether there is life or not. Mind, too, can be defined in terms of function and behaviour, but the definition is never complete. Some behaviour which has all the appearance of consciousness is a set determined pattern in which volition and the usual attributes of will and mind play no part, as in the extremely complicated operations of certain instincts. Yet creatures which exhibit this intricacy are quite incapable of solving the simplest new problems, and even of performing the simplest tasks that any higher animal could perform.

It is just this vagueness which makes discussion of brain and mind so very difficult. Almost every author makes his own definition and that definition is, in turn, adapted to the theory he is concerned to demonstrate.

There is no standard of reference, at any rate in the more philosophical approaches; and often when the philosopher affects to discuss the findings of science, the data he selects are those which serve the purpose he has in view, simply because, in many cases, he has neither the training nor the equipment for the truly scientific approach.

One of the greatest of our modern physicists has said that the aim of modern science is not to explain but to describe. In some remote future the time may come when our knowledge of the universe is so complete that everything is seen to be part of a co-ordinated whole; but that time is far ahead. In the meantime, it is best to be humble, to be conscious of our own ignorance, recognizing it to be so much greater than our knowledge.

That is the attitude in which this book is written. Coloured it must be, here and there, with the author's own failings and points of view; but that is inevitable. The approach is, as in every book in this series, mainly medical. Quite frankly it is admitted that in some respects the mind operates as though it were a mechanical system; at others as though some forces were at work of which we know nothing. We are fighting a stern war against what is, after all, a vast ignorance of things mental, and the forces available are neither so great nor so highly trained that we can afford to dispense with any willing helper just because we do not approve of the cut of the uniform he wears.

There are mechanists who have nothing but contempt for the work of Freud and various psychoanalytical schools that have sprung from his pioneer work. There are psychoanalysts who approach very closely to the old philosophical school and seem to think that neurology—the science of nervous action—is something that has no contribution to make to psychological knowledge—though Freud himself would never have taken that view.

There are cranks and quacks in psychology as in all fields of medicine, and the true research worker should not pay them the compliment of taking them more seriously in psychology than elsewhere. Can anyone say there are more quack psychologies than there are "cures" for cancer?

It is through practical psychiatry, the experience of those specialists to whom come men and women afflicted in the mind, that we shall learn most about the workings and secrets of the human brain; it is from the theorists of whatever school that we shall learn least. As soon as that fact is realized and more provision is made in our hospitals and medical services for psychiatric diagnosis and treatment, our progress will be speeded up immeasurably. For there is, alas! all too much raw material on which to work.

It is, indeed, a sad comment on our civilization that one reliable estimate gives the probability that one baby in every thirty-five born will be certified as mentally deranged before he reaches life's end, that in 1938, the last normal year for which statistics are available, one in every two hundred and fifty-six of the population of England and Wales was under the care of our mental hospitals, and that one in one hundred and twenty-five of the population is a mental defective. The picture is all the more depressing when it is realized that these figures are probably incomplete, for the average medical practitioner has had little or no psychiatric training or experience and is quite likely to diagnose as physical illness some condition that a specialist would see to have its origins in neurotic disorder which requires psychological treatment.

If we cannot define life, we can, in everyday affairs, recognize a living thing from inert matter. If we cannot define brain and mind, we can, similarly, recognize

certain attributes that signify its possession. And we would all of us say that it is brain which gives man his distinctive place in Nature. For this reason, diseases and derangements of the brain are those which strike most keenly and harshly at the very structure of man. A low-grade idiot is barely man; but a man who has lost legs and arms or both, or has had a large part of his internal organs removed by surgical operation, remains man because he retains his mental abilities. Genius of mind is not so very infrequently associated with bodily deformity and it is genius of mind that enriches human happiness and experience. The great athlete with the perfect physical constitution astonishes his day—and becomes a legend; but Homer, Shakespeare, Beethoven, Michaelangelo, Newton, Plato, are for all time an integral part of human achievement.

One by one the diseases and deformities of the body are yielding to the skill of the physician and the surgeon. Medicine's greatest task is now to gain conquests on an equal scale in the realm of the mind. That is the measure of the importance of the psychiatrist's task, one so immense that no tool is too trivial to be useless in it. The average man, too, must come to understand more of the complicated apparatus he calls his brain and its delicacy. Modern states recognize increasingly that bad housing and poor feeding make inefficient citizens. The future must see to it that conditions are not tolerated which breed warped and undernourished minds, which are so much more serious than disordered bodies.

CHAPTER II

THE BRAIN AT WORK

IT IS IMPOSSIBLE to consider the brain without also considering the whole nervous system. The reason for this is quite clear and follows inevitably from the brief sketch in the first chapter of the evolution of brain from the simple chemical responses of the most primitive unicellular animals. Throughout the human body—or any animal body with any sort of nervous system—there are little knots or complexes known as ganglia, where various groups of individual nerves come together and a certain amount of co-ordination between them is effected. These in turn lead to other ganglia or centres, and so on to the human brain. Physiologically the brain is simply a much enlarged and concentrated ganglion co-ordinating the whole of the functions of its various sub-ganglia, and it is the practice of certain biologists and zoologists to refer to the brains of the lowliest animals simply as “head ganglia”, a term which has much to recommend it and which does bring out the fundamental difference between a brain, in the common sense, as a centre of conscious mental activity, and a mere automatic co-ordinating centre which might be likened to an automatic telephone exchange receiving and transmitting to their correct route the incoming signals of the various subscribers—the receptor nerves—so that they reach the called subscriber—the effectors.

There are in man and the higher animals four clearly defined divisions of the nervous system, and each is the counterpart of one of the evolutionary stages already briefly indicated. These four divisions are known as the

sympathetic, the spinal, the cranial, and the cerebral. The sympathetic is the product of many millions of years of organic evolution and it is, in the political phrase, a state within a state, for it is almost entirely self-dependent. On its working efficiently hang the vital, fundamental operations of the bodily machine, for it controls directly all the involuntary muscles and glands of the body, such as those of the heart. It can exist apart from the rest of the nervous system, for if all connections are severed it continues to function, and it is something that man shares with all but the very elementary forms of life.

In the spinal system, man has a link with those creatures that have developed as far as having a crude nervous system radiating from a central spine. This again is largely automatic in action. Through it the body receives impressions of touch, heat, cold, and so on, and various voluntary muscles are controlled by it. Here in this system is the first indication of the nervous operation known as inhibition, or the suppression of instant blind response to external or other stimuli. A large number of experiments have been carried out with so-called "spinal" animals—that is, animals in which the spinal nerves have been separated from the higher centres—and much valuable information has thus been gained. Though in comparison with the working of the brain itself, the spinal system may seem rudimentary, it is, in fact, highly complicated and is capable of sustaining without any higher help a great many intricate movements and reactions. Here it is seen that purpose in nervous reaction is not necessarily a sign of will or consciousness. The foot of a spinal animal will be withdrawn if it is irritated, and the animal will take many extremely important steps for its own preservation, though all the influence of the brain is absent.

The cranial division represents a still higher stage of evolution, in which further controls are introduced and a greater range of purposive action is made possible. The animal experiences the first dawning of consciousness when it has reached this phase and it is clear that the roots of man's own consciousness, such as his perception of his place in space and time, lie in this division of his nervous system. Through this division of the nervous system, the forces of instinct work most strongly. It is the last purely automatic mechanism in the hierarchy of the nerves.

So, in the fourth division, we come to the cerebrum which in man has attained such extraordinary development. It is at this level that pure instinctual behaviour is left behind and instinctive and automatic actions come under the influence of a new factor—that of reference to the individual experience of the animal. Without the cerebrum there is little or no capacity for learning and memory, apart from that inherited as instinct.

The cerebrum was not something new in the history of the development of the nervous system. Like each of the preceding divisions, it grew almost naturally out of what had gone before, and all its basic materials had found their first origination in the other sections. Put another way, the cerebrum, to begin with, was a reorganization of certain special senses and only later acquires the ability to attain the special qualities it reveals in man himself.

Various lobes or ganglia had already become prominent at the fore-end of the brains of animals in the cranial or spinal stages. Thus, in most it was the olfactory (smell) lobe which was most prominent because the majority of animals order their existence by smell and receive their most vivid impressions of the outer world through the nose. But in some species, such as those from which sprang

the ancestors of men and apes, the optic lobes had become the most prominent. In the initial steps of evolution towards a cerebrum or higher brain these activities became centred in an organ which still retains high importance in man's nervous economy—the thalamus. The cerebrum may therefore be considered as a refinement and upward development of this organ. Stage by stage it grew and developed, so that at last it overshadowed the thalamus, which has become a relatively small organ at the base of the cerebrum.

At first, the cerebrum was concerned principally with effecting a higher degree of co-ordination, thus giving the animal a greater experience and ability to survive. The various centres to which the nerves ran were crowded together and there was not sufficient room for anything else. This is so with the lowlier animals that, existing today, have attained the cerebral phase, as, for example, the frog. But as evolution progressed, the cerebrum expanded and the skull grew larger to accommodate it. The various nerve centres were thus thrust further and further apart, leaving gaps between them. Thus began the "association areas", and it is precisely these which attain their highest development in man.

Here, in these spaces between the centres concerned with sensory experience, take place those mental processes which we call thought or reason and intelligence. In man the association areas are very extensive indeed. They have no distinct functional purpose in the sense that they do not directly control muscular action. But it is in them that memories are stored, judgments made, experiences relived for present betterment. There is a very big gap between the extent of the association areas of the dog, say, and the ape; but the gap between the ape and man is even greater. A child described as mentally deficient and never capable of growing into a rational

adult has yet a larger associational area of the brain than a full-grown ape. It is this which makes the uniqueness of man.

Let us look at this remarkable organ more closely and see how it is constructed and how it works—so far as modern science can tell us. The cerebrum consists of two practically identical halves known as the hemispheres, and each hemisphere has an outer covering known as the cortex. The cortex is known as the “grey matter” and the popular phrases which associate it with learning and mental ability have a firm foundation. This cortex is, in fact, a mass of ganglia or nerve cells, which communicate by means of fibres with the white matter that forms the lower layers of the hemispheres.

There is a very close connection between the number of these grey-matter or cortical cells and intelligence, and in the human brain their total runs into an inconceivable figure put by most authorities at very nearly ten thousand million. Brain size is thus in some degree a measure of mental ability, but it must be realized that this is not the total size or volume of the brain. Because the cortex grows, it forms into a number of folds or wrinkles on the lower layer, and it is on the extent of these folds that intelligence depends.

By many it is held the whole secret of brain disease and derangement, from mere mild nervous habits to serious mental illness, and therein lies the functioning of these cells. There is here a very intricate network of almost unbelievable complexity. It is therefore urged that if there is a deficiency in the number of cells present in the association areas, nothing but mental dullness can result; the greater the deficiency the greater the degree of mental defect. On the other hand, it is said that genius is the result of an abnormally large ration of brain cells. Though there is good evidence in support of this view, it cannot be

taken as proved beyond all shadow of doubt and to build complete theories on the assumptions it contains is perhaps going further than is justified.

But it is not merely through deficiency in the number of cells that mental disorder may result. The cells form a most complicated system and, like an involved electrical network, there is ample chance of leakage and short circuits or even of wrong connections. Hence it is believed that some forms of brain derangement may result from breakdowns not in the numbers but in the connections of the cells with each other; and in view of the complexity of the system and the vast number of cells involved, there is ample scope for such breakdowns.

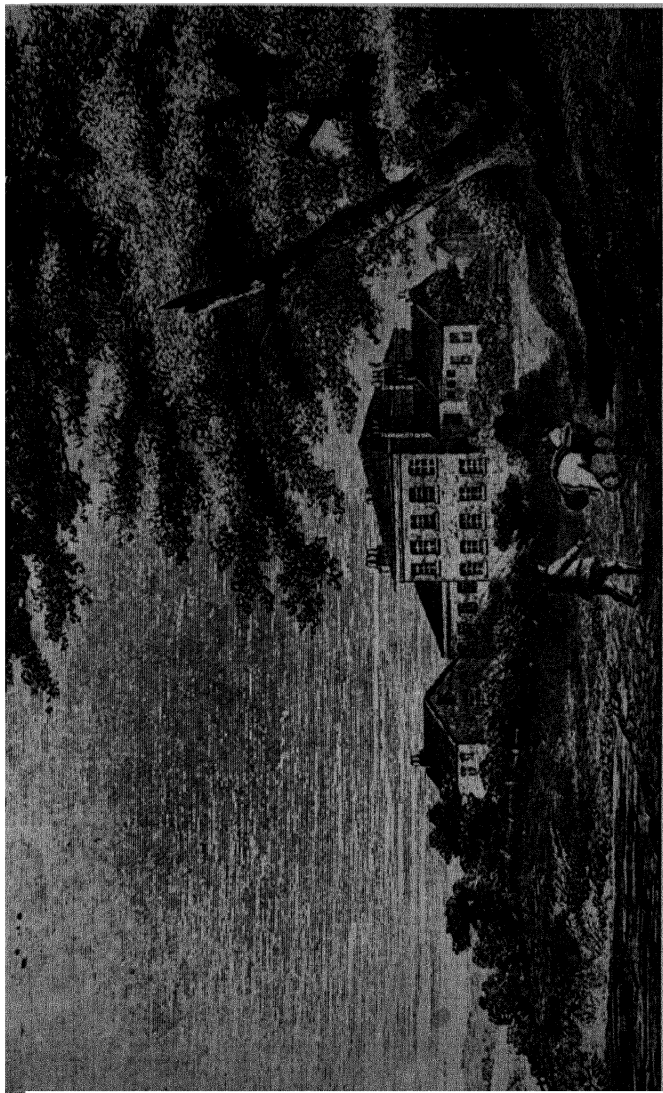
Ingenious and sometimes difficult research has led to the establishment of definite localities on the cortex with certain activities of the human body. Thus, the motor area, which controls the operation of muscles, runs across the very summit of the brain. Alongside this area lies the sensory area, where the sense impressions are received and appreciated. There are, too, definite localities for sight, hearing, language, and so on. These definite areas are guides in making diagnoses of certain kinds of organic mental trouble, and injury to one of them leads to a loss of function of the particular activity controlled by that area. But it must not be thought that these areas are entirely independent. They work in close collaboration, and damage or failure on the part of one area may have repercussions on others. The brain is a most closely interdependent and interrelated organ and every fresh discovery goes to show that it cannot be broken down into independent and sharply divided sections having no relationship to the others.

Essentially the material of the brain cortex is the same as that of which nerve fibres are composed, and the cells share with the nerves the special quality of becoming

conditioned to a particular kind of stimulus. In the receptor nerves their ability to respond to certain kinds of stimuli is more or less fixed by heredity, but in the brain there is not the same sort of specialization at the start. The brain of a baby is supposed to be like a wax mould that may subsequently be shaped by external forces. Thus, education and environment can produce an almost infinite number of different results. In this way, the curious thing we know rather vaguely as human personality is created. No two brains react even to identical upbringing in quite the same way, and hence no two people, even identical twins, are ever perfectly alike in their mental or even physical reactions. Complicating this is the fact that heredity does play some part by determining in a general way certain qualities in regard to learning—inherited aptitudes, as they are called. Yet in the main it seems that in mental development it is nurture rather than nature that governs the path of progress or the reverse.

It is when the question of the so-called psychic functions of the brain—the ability to learn, imagination, and the rest—comes to be discussed that science speaks with a less assured voice, and it is in this matter that the theorist finds the greatest scope for his hypotheses. Much work remains to be done before any of these theories can gain universal acceptance.

In general, then, the structure of the cerebra of all animals who have that stage of evolution follows a closely similar plan, and the only difference between various species is in the size. But it is in man alone that the association areas of the prefrontal region of the brain acquire complete domination of the whole. These are the seat of all that is distinctively human in man, for learning and experience and appreciation of any kind are given an immensely heightened power by means of the memories



“The Retreat” near York, founded in 1792. The first institution in England for the scientific treatment of the insane.



Greatly enlarged nerve cells of the brain.

stored in these areas. Even in the great apes, whose brains come nearest to those of the living men, the association areas are relatively small. Thus their responses are more direct and their impressions less vivid. When a man sees an object, unconsciously a very complicated mechanism is called into action, and the sight is impregnated with a multitude of memories and associations. Man's mental superiority, then, is in some respects at least a function of his vastly increased powers of memory and association, due in turn to the number of cells in his cerebral cortex, a number so vastly greater than that possessed by any other creature.

Interesting comparative studies have been made between the apes and men as regards powers of learning and so on. Some investigators have put human children and young apes of equal age together and subjected them to the same kind of teaching. The curious fact is that in many instances it was shown that the apes progressed more quickly than the human young, but this was only for a time. The young apes quickly reached a limit beyond which they could learn no more, while the children did not reach any such stage. On the contrary, the older they grew the more their ability to learn increased.

This is not so very surprising. The ape's mind works more directly and thus is able quickly to form associations, but when those have been established, the matter ends. On the other hand, the children were constantly storing up new impressions and new relations. Thus, as the tasks and lessons grew more advanced, the apes were unable to follow what was afoot; their capacity had been reached. The children, however, were able to refer the new and more difficult things to their constantly growing experience. Their learning had become *conscious*, as distinct from instinctual.

ground at all for phrenological theory and those who seek its aid are victims of the undying human urge to find some substitute for their own judgment and courage in the battle of life.

The distinguishing character of the human brain as regards animal behaviour is its power of inhibition and control even of automatic actions. A chimpanzee putting its hand into a flame accidentally will do nothing but withdraw it; the reflex is automatic and instantaneous. Man, on the other hand, will be influenced by the same automatic reflex, but he has, if he wishes, the power to maintain his hand in the fire, despite the pain, till it is destroyed. The inhibitory power of his brain is so great that he can direct himself to a course of action which is directly opposed to one of the cardinal principles of Nature: the preservation of life and individual safety. There is even some evidence to believe that Oriental fakirs can, by practice, control the workings of the autonomic (sympathetic) nervous system and cause the heart to stop beating by an effort of will.

From considerations of this kind it is seen at once that it is the brain, with all its complications, that have given man his supremacy among mammals. He shares with apes the prehensile hand; and they share with him the ability, though they do not frequently make use of it, to walk upright. But man alone has the brain that can make him completely independent of his environment. Because of his brain he alone is really free in the animal sense to go where he wishes and adapt himself at once by conscious direction to his environment.

To the brain in its waking hours come a myriad stimuli, suggestions, promptings, and most of these it deals with automatically. Its powers of inhibition and suppression are important not only because without them reflection and conscious action would be impossible, but also because

Relics of prehistoric early men show that fairly early in man's evolution the modern brain form had become more or less settled. There is little enough difference between the size of a cranium of Cro-Magnon man, of the Stone Age, and that of a modern professor. There is reason to suppose, however, that the cortex of the latter would be more highly folded, though the cultural level of Cro-Magnon man was, in truth, exceedingly high.

Perhaps it would not be out of place here to say a word or two about the pseudo science of phrenology, which still, to judge by advertisements in certain journals, provides its practitioners with at least the basis of a livelihood. Phrenology is the "science" that purports to find associations between the bumps on a man's head and his intellectual and mental attainments. Its followers believe that an analysis of the bulges and depressions on the skull can be a guide to character and even destiny.

On the face of it, this seems logical enough. If every area of the brain is definitely associated with some particular human trait, then large development of that area will give its owner a particularly plentiful endowment of that quality, and this development should be reflected by the contour of the cranium.

Nothing could be further from scientific truth. The brain does not grow outwards. The cortex expands and folds inwards, and its growth is quite incapable of affecting, at any rate to a noticeable extent, the bony sheath of the skull. Moreover, the "areas" laid down by the phrenologist bear little enough relation to the areas defined by scientific research, which, indeed, confesses its present knowledge very far from complete. In addition, it is now realized that mental abilities are not strictly localized but depend upon the harmonious interworking of many centres of the brain. Thus there is no

the human senses of perception, particularly sight and hearing, are so strongly developed that without these powers the mind would become swamped with a multitudinous confusion of sights and sounds and their associations. Impairment of these powers is a potent form of mental disorder that may have the most serious consequences.

Growing from a rudimentary system designed to aid the living cell to accommodate itself more efficiently to its environment and developing through stages that have led to the whole wonderful products of instinct, the human brain has reached the stage whence it has acquired the power of reversing the normal order of nature. It can give its owner power to destroy or damage himself, despite the elaborate and automatic protective mechanisms with which the body is endowed; it can give him insight into problems and cause him to seek solutions outside those afforded by the ordinary course of nature. It has already ushered in a new phase of evolution in which bodily adaptation, the theme of all natural selection, is of no account at all.

It is wrong, therefore, to consider that the brain is a mere organ of the body. That approach is true when any of the lower animals are studied since the emphasis even in the great apes is on automatic reflexes and not on considered behaviour adapted exactly to the conditions of the moment. The body has become the vehicle of the mind. It has the strange and at present imperfectly understood power of originating disorders and even physical symptoms in the human body and, no less, it confers the ability on certain individuals actually to control and partially suppress the effects of demonstrable physical disease. In man, the brain and mind no longer merely serve the body; they control and direct it. To say that man is brain and brain man is no over-statement.

But to make it, brings to the fore the fact that a different approach to its problems is needed than that which serves so well for the examination of brains that merely serve the body or do so as their primary, if not exclusive, duty.

The frontiers of the mind—which is strictly a synonym for human brain—are so far by no means clearly marked out. They cannot be—yet. The modern scientific interest in what are called extra-sensory phenomena is something more than a passing phase; it is a serious attempt to get to grips with a mass of evidence which suggests that the mind is not exclusively activated by the ordinary means of perception. Authorities of high standing are prepared to admit that there is some evidence of this kind that cannot be explained away, particularly in the case of telepathy. If this be so, then the limitations imposed by a purely mechanistic approach to the human brain are seen to be not merely dangerous but fallacious. I myself am non-committal on these topics, though I am convinced they should not be swept aside so lightly as some are prepared to do.

The main point seems to be that it is as yet far too early to attempt to produce any scientific theory of mind and brain that claims to be self-sufficient and exhaustive. There is some grain of truth in almost all viewpoints and the cautious may well see in this indications that each is some glimpse of an entity whose clear, defined outlines we cannot yet see. Meanwhile there is work to be done in tending to the mind that is sick, and the healer cannot tie himself down to one particular method. Man's personality is so varied and variable that it is impossible that any one limited explanation can apply to it. Only by the accumulation of evidence, of necessity a slow and tedious matter, can any real approach to the truth be made. No one, looking at all the clear evidence today and sifting

it from the wealth of theory and speculation that has gathered round it, can say that there is yet enough. The human brain, which has given man the power to understand so much, has no more difficult problem before it than that of understanding itself.

CHAPTER III

THE MIND IN DISARRAY

IF THE evidence of the working of the human mind in health is slowly acquired, knowledge of the behaviour of the mind in disorder has been very rapidly built up, especially since the beginnings of the present century. While this has resulted in the gradual emergence of a picture in which an almost demoniac fantasy is detectable, it has also had the benefits of conferring on the doctor a vastly increased range of weapons with which to conquer the diseases of the brain.

No longer does the doctor's task end with certifying a sufferer from advanced mental disorder as a lunatic and having him speedily and decently removed to an institution where his vagaries are concealed from the attention of more normal people. The asylums have become hospitals, and there the word "incurable" is becoming as moribund as it is in the hospitals which deal with physical disease. Moreover, the general public is gradually coming to the point of view that there is no more disgrace in admitting to some mild form of mental derangement or illness than to an attack of influenza or pneumonia. If the brain is human, it is neither more nor less exempt from the human burden of disease and suffering. Just because its causes are more intangible, the treatments for it less familiar, they are none the less real and no less worthy of the highest and most devoted skill than physical ailments. The old attitude that mental disorder is a stigma not to be lightly acquired remains, but neither logic nor experience can explain why, to be brought to hospital by a bacterium or a virus should be less

reprehensible than to be afflicted by some profound mental shock.

Many factors have contributed to this new and welcome trend of public opinion. One of them has undoubtedly been the more sensational theses of certain members of the psychoanalytical school; and if there were no merit in psychoanalysis itself, it could at least be said that it has done a great service to the public and the medical profession alike in focusing attention on the importance of mental health and hygiene. Another has been the stress of living in the twentieth century. Conditions of modern mechanical civilization are such as lead readily to the formation of neurotic and other mental symptoms in a very high proportion of people, and the occurrence of two wars within a generation has aggravated the general tendency towards mental trouble. Today there is a large proportion of the population which reveal psychopathological symptoms, though they would never have done so if they had been left to pursue their peaceful avocations undisturbed by the horrors of total war. It is probable that the psychological casualties caused by air attack on this country are many times more numerous than the physical ones. Conditions of life among a civilian population forced to take service in the Army, Navy, and Air Force, have also directed attention to neurotic illnesses and incidentally led to a fuller appreciation of their frequency—a frequency far higher than had been commonly supposed.

None the less, a great deal of confusion still exists in regard to mental disorders and many old outworn ideas unfortunately still gain widespread support. There is little enough recognition of the fact that mental disorders may be as insignificant and transient in themselves as an attack of influenza and no less uncommon, and also of the allied fact that, again like influenza, if neglected

and allowed to develop they may lead to something very much more serious.

Another fallacy is that mental disorders are, in the main, incurable except in certain favourable circumstances and then only at the cost of a vast expenditure of time and money. Attendance at the consulting-rooms of a psychiatrist is all too often looked upon as an expensive and not very helpful form of idiocy in itself, and a brief sojourn in the mental or psychiatric ward of a hospital is regarded as the first and fateful step towards the lunatic asylum—which again is still popularly believed to be a Dickensian affair of padded cells and “keepers”, more like warders than men and women highly trained in mental nursing.

Let it be admitted that some mental afflictions are very trying and distressing indeed, causing great suffering and danger to their victims as well as to those around them. But so, too, are many physical illnesses whose incidence is taken more or less for granted as a gratuitous stroke of bad fortune. Let it be confessed, too, that there are some mental conditions in which the best skill of the psychiatrist proves unavailing. But so, too, are the physician and surgeon helpless in the face of certain advanced cases of cancer, for example. That psychological medicine fails in some cases does not detract from the impressive fact that it is highly successful in many more, and that the proportion of successes is rising rapidly as knowledge and experience are gained and—most important of all—greater facilities for psychiatric training are provided both for students and practitioners.

Health education has done a lot to help the physician and surgeon in their fight against physical disease, particularly in impressing on the general public that it is easier to deal with disease in its initial stages than when it has taken a firm hold, but there is not yet a similar

outlook in regard to psychological disturbances. The task of the psychiatrist is thus made more difficult since, as a rule, he sees only cases in which disorder has become far advanced and unmistakable. The general practitioner, too, finds difficulty in inducing patients to take psychological treatment, since the majority are not satisfied unless they return from a consultation with a prescription for a bottle of medicine or a box of pills. Nor has the large amount of publicity which psychology generally has received in recent years done a great deal to promote a sane outlook. The average man is inclined either to regard all psychology as an elaborate structure erected on nothing, or else to develop into a blind devotee seeing psychological causes for even the most obvious physical complaint, and ascribing to complexes what should clearly be referred to bacteria. There is need for a clearer and better understanding of the mind in disarray and even more of the fact that the dividing line between psychological and physical illnesses and treatments is so shadowy that it is virtually non-existent.

The first step in such enlightenment is obviously a better knowledge both of actual psychological symptoms and of their cause and treatment, and a brief survey of these subjects provides many interesting sidelights on the secrets and behaviour of the mind, which could not unjustly be called man's greatest mystery.

Modern psychiatry covers an immense field, and nothing is further from the truth than the popular idea of a psychiatrist as a full-blown psychoanalyst. True, he may, when the case demands it, make use of an analytical technique, but that is comparatively rare. In modern psychiatry there is a range of treatments from the complete analysis, a purely psychological measure, to physical methods, and often a combination of these is necessary.

All mental conditions are the result of three inter-related factors, and these play a part both in normal personality and in abnormality. These factors are, first of all, psychological ones—that is, to purely mental disorders or bad adjustments. The next is the physical factor for many physical diseases and conditions have a disturbing reaction on the mind. Finally, there is the constitutional factor, which in psychiatry is of special importance. Just as there are individuals who are specially sensitive to certain diseases, as the result of their heredity so, too, there are minds which are more apt to develop psychological disorders under conditions that would not produce any effect on another person in similar circumstances. This, of course, is common knowledge. Normality grades off imperceptibly into abnormality in the mind and no one can say where the frontier lies; indeed, it is likely that what would be normal in one individual would be abnormal in another. A similar state of affairs applies, to some extent, in physical conditions. Popular belief is that madness runs in families, and though this is to some extent true it is not so universal as some people imagine; but the idea enshrines in a striking way the importance of constitution and heredity in psychological medicine.

In every psychological disturbance these three factors interact, and it is true to say that no one of them by itself has any supreme power in producing adverse mental effects. There are plenty of examples in modern civilization of the interplay of the psychological and physical factors. For example, bad housing may lead under slum conditions to louse infestation and perhaps typhus; it may also, in the mental sphere, promote feeling of frustration developing at last into anti-social behaviour. But both the physical and psychological outcomes will be conditioned by the individual's constitution. This is a

simple and obvious case, but it could be supported by many others and more subtle ones.

A great deal depends upon the physical condition of a person. For example, a man receiving bad news of, say, his business, may take it very hard and develop acute psychological symptoms of depression or even derangement if the tidings come to him when he is at the end of a long and exhausting bout of malaria, whereas if he had been fit he would have faced the new position squarely. The process works the other way: the recovery of a patient after a serious operation can be profoundly influenced by his mental state, for the "will to live" and its converse the "wish to die" can be very powerful factors. Many a doctor's confident prognosis has been falsified not because his scientific judgment was wrong or because of defects in care and treatment but simply because the patient has not given full psychological co-operation. The unexpected death and the sensational cure are not infrequently due to the mental effort of the patient, bringing in the former undeserved discredit to the doctor and in the latter a reputation as a miracle-worker he would be better without.

Today, psychiatrists do not ignore the physical factor in the causation of psychological disorder, but on the other hand they strive to avoid the old-time tendency to over-emphasize it. Some depressed psychological states may be due primarily to physical causes which can be dealt with by physical means; but by themselves they do not effect complete cure. For example, many people during the war found themselves directed into employment to which they were unused and which was often distasteful to them. Long hours under far from ideal conditions produced signs of physical breakdown, for which physical treatments of many kinds are available. After such a course of treatment the patient may well seem fit again;

but if he is sent back once more to the old conditions, he will speedily deteriorate, since his mind is in revolt against the conditions. He needs psychiatric treatment, of which the very simple and obvious one of more suitable occupation is one of the most important items. Yet it is surprising how often this vital step to complete recovery is ignored. The tonics do their work, but the underlying psychological cause is not affected by them.

Equally important is the avoidance of assigning purely psychological causes to mental illnesses, for there is usually a physical substratum even when the mental cause seems clear-cut and self-sufficient. The treatment of mental disorders today is, in fact, a balance of physical and psychological factors.

Examples of the important part played by the constitutional element are widespread and it is not easy to quote simple examples, but the real effect of constitution is to give a predisposition of a patient to a particular symptom. If he is constitutionally inclined to digestive troubles, for instance, nervous upsets will probably induce these physical disorders. On the other hand, a patient constitutionally inclined to asthma will react by developing this condition under similar psychological states of stress.

What, then, is psychological or mental disorder? There is no simple or adequate answer to that question. The physician can give precise definitions to certain diseases if only because some of them are caused by the invasion of the body by a specific, recognizable micro-organism. In psychological medicine there are few such sharply outlined states. The psychiatrist recognizes certain combinations of symptoms—or syndromes, as they are termed—but in the main these are classifications for purposes of convenience rather than labels to be tied onto certain definitely distinct conditions. The causation of these states is varied; their effects are no less so and are

conditioned by the particular make-up and experience of the individual concerned. There is thus room for very great latitude in psychiatric diagnosis, but this is no real handicap. Medicine as a whole is limited by the same thing because its concern is with the infinitely variable human being, and if it attains precision it is simply because the human body is less variable than the human mind. Because the psychiatrist cannot immediately lay his tongue to a rich polysyllabic name to describe his patient's condition, it does not mean that he is unable either to recognize or deal with that state. Modern psychiatry's success is due to its flexibility and ability to adapt its methods rapidly to individual circumstances.

For all this apparent vagueness, it is possible to give a good general definition or description of psychological disorder. It may generally be defined as a breakdown in the ability of the sufferer to adapt himself to life and his environment. The mentally afflicted, whatever the degree of his trouble, is a misfit, and this applies as much to the person who feels shy in all company and therefore "out of it", as he will describe his feelings, as to the victim of hallucinations who considers himself Alexander the Great and tries to conduct himself as though he were so in fact. Maladjustment is the basic feature of all psychological disorder.

The resources of the human mind are inexhaustible and ever springing fresh surprises. Nowhere is this seen more strikingly than in cases of mental disorder, in which, all too often, the very same factors that can produce a Shakespeare or a Goethe have got out of hand.

Probably the chief characteristic of the normal individual is consciousness. He is aware of himself, his surroundings and mutual relations. At the other extreme lies unconsciousness where to all intents and purposes there is nothing left but a body automatically carrying on its

functions. Between lies a scale of continuously shading states, all of which indicate some form of mental disorder whether slight or severe. There is, for example, the man who finds concentration difficult, is hazy about his surroundings, and thinks slowly and with difficulty. His mind has retreated slightly from normal rather than developed any abnormality. Within this state of dimmed consciousness, as it is called, are many minor gradations, the most intense being a sort of waking slumber from which the sufferer can be roused only by violent means. Delirious states are more serious. Not only is the consciousness dimmed or clouded; its working is disordered. There are hallucinations and impressions of experiences that have nothing to do with ordinary life. Rather similar, though of shorter duration, are the twilight states most common in epilepsy. The consciousness is much dimmed, hallucinations occur, and the world of reality is subtly altered but without the complete withdrawal that distinguishes the delirious states.

It is impossible in a book of this kind—and indeed it would be tedious—to attempt to describe all the signs and symptoms of mental disorder. It is sufficient to present a general picture, and probably one of the best ways to gain an idea of the infinite variety of psychological derangement is to reflect on the many-sidedness of the mental life of even the humblest citizen concerned with the simplest task. That life and experience is obviously far richer than the life of even the higher apes—and any one facet of it is likely to become dimmed or chipped. There are innumerable ways in which the human mind may fail to do its work, and the combinations of these various single ways is incalculable. The marvel is not that psychiatry cannot define exactly, but that so many similar conditions and constantly recurring effects are observed.

The worst possible judge of one's psychological state is oneself. The memory plays strange tricks, and some of them are designed to make life more tolerable. Thus, the mind does not often accuse itself openly. It will seek an explanation for curious or even underhand conduct that does not injure one's *amour propre*, and this explanation is all too readily accepted. This form of unconscious self-deception may in time influence the whole of a person's behaviour, and when that occurs it is high time that the psychiatrist was called in.

In modern language the word "repression" is used and overworked. But it is a mechanism today accepted as operating in all minds. Briefly, the mind tends to forget unpleasant experiences and thrust them out of the way into unconsciousness, though they are never completely erased from the memory. It is when this repression is not satisfactorily carried out that many mental conflicts arise. The unwanted thoughts and memories press back, demanding, as it were, a recognition that they are denied. So a state of tension is produced in the mind and from that springs conduct which may have serious results. But not all repression is bad. It is a normal process of protection. Just as the body tends to throw out poisons and foreign bodies, so does the mind; but whereas the body can eliminate its unwanted intruders into the outside world—or medicine can remove them for it—the mind, as a rule, merely forces its detritus out of sight where, if there is mental shock or a profound disturbance of emotion, it can be a source of renewed trouble. It is a remarkable fact that a patient can be aware of mental tension yet fail to acknowledge it, so when physical symptoms arise from it, such as, for example, an irritating nervous habit or tic, he will seek physical relief and the psychological background can be filled in for him only with the greatest difficulty.

The mind in disarray is given to the most curious behaviour, ranging from the monotonous repetition, without apparent reason, of long strings of words or sequences of action, to the creation of a dream world that has no contact with reality. There are unreasoning impulses, such as the well-known (and often derided) kleptomania, which causes its victims to steal all manner of items for which they have no need at all, and the less well-known pyromania, which is an uncontrollable urge to incendiarism.

The whole emotional and psychic life is upset in serious conditions. Mild, philanthropic individuals will suddenly rejoice in the most bestial and non-moral thoughts, but in other cases there is complete loss of all feeling. Hallucinations take the most astonishing forms, ranging from visions to messages, while there is also, among many others, the very curious state of depersonalization, in which the sufferer suddenly feels himself changed and withdrawn from the world, so that he imagines he can view his own actions from the point of view of an outsider. A sufferer may even consider himself dead.

A mere catalogue of the curiosities of disordered minds of which the foregoing is only the briefest quotation—is in itself frightening and depressing, and it is no wonder that, for so long, afflictions of the mind were considered a dispensation of Divine justice against which it would be impious of man to struggle. The most that could be done was to remove these victims to places where they could cause damage neither to themselves nor their associates.

But today that attitude has almost, if not quite, completely gone. Mental disorder is no different from physical disorder. It may be more difficult to define and deal with; the treatments may not be so obvious; the application of laboratory principles may not be so

simple or even desirable. Yet the fact remains that striking progress has been made and it will be the purpose of what follows to show how some of these successes are being won. Slowly man is conquering the enemies that afflict the mind, and he is employing the methods of total war against them, despising no weapon because it seems crude and denying himself the use of no means simply because it is unconventional. He fights psychoses with drugs and electricity, and deals with physical symptoms by psychotherapy. In justification he points with not unjustified pride to the increasing number of battles he is winning.

CHAPTER IV

PSYCHIATRY IN ACTION

How DOES modern psychiatry go to work, and what are the methods it employs? The answer to that question, if given fully, would occupy a very large volume, and much of it would be of interest only to the specialist. In this chapter it is proposed, therefore, not to give a general description of psychological medicine but to deal with one or two of its more spectacular recent conquests.

Let us begin first with schizophrenia. This is a mental condition which has been known for a long time, though recent research has added a great deal to our knowledge of it. In the past it was called *dementia praecox*, which was a misnomer, for it implies that the affliction consisted of mental suffering of an advanced type at an early stage. Schizophrenia means "split mind"—it has latterly become the happy hunting ground of ambitious but not very well-informed novelists and film-script writers—and the condition is now believed to include as subdivisions of it certain states hitherto considered independent, including paranoia.

Schizophrenia is not a disease in the ordinary sense: it is the title given to a particular collection of symptoms, or syndromes, that may arise from several different sets of causes. These symptoms are many and varied and include some of the most remarkable revealed by the mind in disorder.

The onset of the condition is often slow. The patient feels perhaps irritable and "touchy", though he may equally begin to develop a general indifference to his surroundings and show signs of withdrawing from the

world of friends and interests into his own secret thoughts. It is remarkable that these indications are at first not recognized by the victim himself though his friends may discern them more clearly. When at last recognition of the change within himself is made, then the sufferer more often than not ascribes it to things and people outside him; it is they, not he, who are altered. For him the world is a stable place within.

This deterioration, which is at first little more than an attitude to life, increases rapidly until it shows in his emotional expression: the schizophrenic may be stupidly cheerful or, less often, morose. His gestures and facial expressions become stereotyped and lack spontaneity. It is not without reason that these indications have been described as giving the impression of bad acting. The amateur playing Hamlet may give a poor impression of the character as Shakespeare saw it, though his interpretation of Hamlet's schizophrenia may be better than John Gielgud's! And with this the desire to withdraw into self-isolation increases. The schizophrenic loses contact with the world, for he is building up within him a world of his own.

It is not only the emotions which die slowly. Powers of mental action gradually grow weaker. The ability to make decisions and act without prompting disappears, and a gradual desire to do nothing appears, so that in advanced cases, the sufferer will remain like a statue for lengthy periods. Just occasionally this immobility deepens into stupor and a curious condition known as automatic obedience, which means that the subject will conform to any instructions without question, even though they may be utterly ridiculous.

When this stage is reached, the personality is beginning to split or disintegrate in real earnest, and the powers of co-ordination that are typical of the human mind are

failing. It is a common thing among schizophrenics to allow the existence of completely contradictory desires in their minds at the same time—to ask for things, refuse them, and then, when they are again offered, once more to refuse them.

But the victim does not always remain passive. His semi-stupor may be abruptly thrown aside and he may embark upon a phase of almost wild activity. This has dangers, for the activity often takes a destructive or mischievous form, and in this state the schizophrenic is not above attacking those whose task it is to minister to him. As a rule, these excited moments pass fairly quickly, and are replaced by the original immobility. But as the disease progresses, excitement may grow more intense and more frequent, and the movements, often purposeless, acquire a very striking semblance of order and precision, so that they have been likened to a devil's ballet. At all these stages the victim himself may alternate between two views of his own behaviour: he may be aware that there is something wrong and strange in his behaviour; or he may ascribe it all to outside interference—to thwarting of his desires and to their subordination to some other power, usually mystic. Very often the fits of activity are begun as a response to instructions received from an imaginary voice, for hallucinations are by no means the least terrible feature of this condition.

The thoughts of the schizophrenic are dull but they may show surprisingly tortuous twists and turns. These thoughts are expressed in rather obscure ways—in pompous language and sometimes, if the patient has ability, by symbolic drawings, to which reference will be made later. Overshadowing all these thoughts is a great and growing feeling of anxiety. There is, too, occasionally "double orientation": the victim thinks he is both himself and some other person, usually someone famous or, in a high

position, at one and the same time. A curiously warped logic binding the two personalities together is sometimes shown by the schizophrenic, whose whole world has the compelling quality of a nightmare.

The hallucinations grow more and more insistent and a delusional system, which is an elaboration of some quite trivial idea, is sometimes built up with a logic all its own. In this stage, which is that of paranoia, the schizophrenic often attempts to create mystical and philosophic systems of his own and to produce involved symbolic drawings of his own which are supposed to represent a greater reality than the normal world. No-one who has seen, either at an exhibition or in reproductions, pictures of the more advanced surrealist school of art theory can be ignorant of what a schizophrenic-paranoid picture is like. These artistic works are definitely claimed to be the results of an artificial production of paranoid symptoms in their creators, and there must be many, besides doctors and psychiatrists, who doubt whether this ambition is as laudable as its upholders proclaim or its products worthy of the effort.

There are many other symptoms which may or may not develop in the progress of this terrible condition, but the foregoing paragraphs outline the main ones. It is little wonder that until comparatively recently the condition was held to be practically incurable and that the only "treatment" was immolation in a mental hospital until such time as the hand of death should snatch the sufferer from his self-created world.

The cause of schizophrenia is far from precisely known, except the main fact that it appears to be hereditary and that periods of severe change favour its development—as for example during puberty and at the climacteric or change of life. Pregnancy and childbirth are also danger periods for those in whose heredity the seed of schizo-

phrenia exists. Other and less common psychological shocks may also induce it to show itself in a subject cursed by his inheritance.

The older treatments for schizophrenia were rarely successful in the full sense. They consisted of occupational therapy, or direction into simple tasks of an ordered kind and general care, coupled with drugs to bridge over the periods of acute excitement. These ordered methods do something to reshape the misfit into a shape that more readily adapts itself to the pattern of living with others. But even when the original attack is mild and of short duration, and good treatment is given, only some thirty-five per cent recover fully after the first attack, and the rest sink into chronic invalidism with the threat of renewed attacks always in the background.

In the last twenty-five years or so, a new and remarkable treatment has been introduced, and schizophrenia is no longer to be classified among the least amenable of mental illnesses, grave though it is. This development is known as shock therapy, and in it is used the hormone insulin which has proved so strikingly successful in the treatment of diabetes. The treatment is drastic, but the results are something much more than encouraging.

The method of insulin shock therapy is to administer sufficient insulin to produce a state in which the blood becomes seriously deficient in sugar. This state, which can produce a deep unconsciousness amounting to collapse, is relieved by the administration of glucose. Artificial attacks of this kind are given six days a week and a total course may consist of from thirty to sixty applications. With each dose the depth of coma is increased.

Somewhat similar is the still more recent treatment by electrical means, which artificially produce epileptic fits or convulsions—a method often referred to as E.C.T., while drugs such as azoman can also be employed for the same

purpose. These convulsions are induced at the rate of two or three a week.

Precisely why these shock treatments are successful is not known, and many theories have been put forward. With these we need not concern ourselves. The practical question is to what degree they offer a cure for one of the most dreaded of mental illnesses.

Here again there is some doubt, if only to the extent of deciding how far improvement is due to the shock therapy and how far the improvement is spontaneous. But it is reliably claimed that the insulin treatment or a combination of insulin and E.C.T. leads to a recovery rate of some fifty per cent, and that in serious cases insulin is the more effective.

The surgeon, too, has proved helpful in alleviating the more distressing aspects of the condition, and reference to this will be made in a later chapter. For the moment, then, it is sufficient to say that great progress has been made in the conquest of schizophrenia, and that while the state remains one of the most serious to which the human mind may fall a victim, the outlook for those who become its victims is very much less hopeless than it used to be.

Another dreaded condition in which astonishing success in treatment has recently been won is that of general paralysis of the insane—G.P.I. which is also known as dementia paralytica. This, as is generally known, is the most fearful of the effects of syphilis, though not all untreated syphilitics develop it. When they do, their condition is indeed terrible. It is an "organic syndrome"—that is to say, its incidence is associated with definite physical signs and symptoms and the disease itself has a physical background. But its more striking and frightening features lie in the psychological and mental realm.

When general paralysis makes its appearance, it is at

considerable periods after the first infection with syphilis, and though there is no fixed time, the most likely period is about ten years later. By that time far-reaching changes have been wrought in the human body. The bones of the skull have become thick and massive; the brain itself has lost weight and acquired a shrunken appearance, particularly in the frontal area, where, as we have seen, the higher faculties are centred. There is degeneration both in the brain substance and in the nerves. The face twitches and contracts in a terrifying manner, and a peculiar and immediately recognizable expression develops on the face. In late stages the whole body becomes wasted and becomes beyond the control of the subject. In the final phases the sufferer is a helpless, drooling idiot.

Nor are the mental symptoms any less horrible. They can best be described as a progressive deterioration in character and a loss of personality. Moods are erratic, excitement following on stupor, and depression on elation. Sometimes the victim has deep disturbances of consciousness and the memory breaks down. Later there is complete apathy and inertia and there is finally complete dementia in which all the mental faculties are impaired. The victim is no longer capable of making the simplest judgment on his own actions and has to be restrained from doing things that would imperil his own life.

General paralysis of the insane was until recently one of the hopelessly incurable diseases. When it struck, there could be only one outcome—the patient trod a tormented path towards his end. It is perhaps hardly surprising that supporters of euthanasia found in G.P.I. one of the strongest points in their arguments, or that those who saw in venereal disease the judgment of God for unchastity found in it one of the most powerful of warnings. In those days, by no means remote in time, some ninety per cent of cases died within five years of showing its first signs,

and the remaining ten per cent were not long in following them.

Today, modern hospitals can point with pride to a complete recovery rate as high as twenty-five per cent, while another twenty per cent of cases treated improve sufficiently to become fit for life in the community. This striking improvement has come about through the adoption of what is known as the Wagner-Jauregg malarial treatment.

In a general way this system of therapy is comparable to the insulin shock treatment used in schizophrenia. The patient is inoculated with the micro-organisms causing tertian malaria, which is then kept under careful observation. The treatment is not without its dangers, for the mental symptoms may grow worse during the course of the fever and the strain on a body already probably seriously weakened by the progress of the disease is heavy. But the attacks can, if they seem likely to be beyond the patient's capacity, be stopped by the administration of quinine or one of its modern substitutes.

After a successful treatment of this kind, there is a marked improvement in the bodily condition and the mental progress may continue for a considerable period, sometimes as long as six months. But unless the treatment is given in the very earliest stages, complete restoration of the mental faculties is unlikely, for there are probably organic lesions of the brain which leave a permanent mark. Nevertheless, the success gained can be counted among the major triumphs of modern medicine.

Very recently, penicillin, the wonder drug, has shown itself to be highly successful in the treatment of cases of this kind, and there are indications that before long its use may replace the malarial therapy, useful though that has been.

These two conditions, schizophrenia and general paralysis of the insane, indicate the growing success of medicine

in dealing with the more terrible forms of mental illness. It will be noticed that in both instances the successful methods are physical, though in the case of schizophrenia it would seem as though the actual action of the treatment is to produce a shock to the mental system that shakes it, as it were, into order again. In other words, psychic effects are produced by physical means. General paralysis is, in itself, an organic disease and it is natural, therefore, that physical methods should prove successful. It would seem, therefore, that if these are the more spectacular examples of progress in psychiatry and the treatment of mental disorder, then the organic methods are proving, after all, to be the best.

It is true that the examples quoted are both physical. The province of true psychotherapy, which is the treatment of mental disability and derangement by purely psychological means, lies in other directions, which are, perhaps, of more immediate interest to the average sufferer. These methods and their uses are discussed at greater length at a later stage. Here it is sufficient to point out that physical treatments of the kind mentioned are by no means the only ones in the psychiatrist's armoury.

The psychiatrist has a very valuable ally in the surgeon, though it may be that the cases which reach the operating theatre are not those which first pass through the psychiatrist's hands. But surgery of the brain is a branch of healing which does much to alleviate mental suffering, and recent advances have consolidated its position rather than weakened it.

SURGERY OF THE BRAIN

MODERN brain surgery—that is to say surgery based upon a clear conception of the theory and physiology of cerebral function—is the product of the last sixty years, and it is in the present century that it has won its place as a normal procedure in which the risks are not abnormal. Yet it is a surprising fact that crude brain surgery appears to have been one of the earliest surgical activities of man, and there is reason to suppose that its practice antedates written history by a considerable period.

Among the skulls which are the relics of ancient cultures existing before the art of writing was invented—the periods assigned to that vague entity “prehistoric man”—there are many which bear obvious signs of trepanning or trephining. This operation, which is of the greatest historical importance in brain surgery, consists broadly of the removal of part of the bony shell of the cranium, usually for the purpose of relieving pressure on the brain itself. These skulls have perforations in them of considerable size, and it is clear that these were made during life. Relics of this kind come to us from undoubted Neolithic deposits (late Stone Age). Originally the belief was held that these operations had been performed for ritual or decorative reasons, in much the same way as contemporary savage peoples produce deformities of mouths, eyes, and noses in accordance with tribal custom, but later authorities, realizing in the light of fuller knowledge that the civilization of the Neolithic or Neanthropic peoples was considerably higher than earlier investigators believed, are almost unanimously inclined to the view that the

trephining was effected for therapeutic reasons. In other words, surgeons working with stone instruments were able to perforate the skull and knew sufficient of their art to effect cures in at least a proportion of cases. The evidence covers a long period of the Neolithic stage of European development, which lasted several thousand years, and all of it points to the fact that this operation appeared quite early in certain cultures and may even have been inherited from the Mesolithic era, between which and the Neolithic there is no sharp dividing line.

It is a commonplace of archaeology to compare the lessons learnt from prehistoric findings with current practices among uncivilized peoples in a comparable stage of development, of which there are many in the world, and on this comparative basis there seems little room for doubt that the holed Neolithic skulls are those of patients of early surgeons. Trephinings were carried out among these peoples for the relief of pain in the head, and though the theoretical basis on which these primitive surgeons worked is fallacious in all probability, the practical results cannot be denied.

The procedure was simple to our eyes, though it is one still employed in a much refined form today. A series of holes was drilled round the circumference of the circle of bone to be removed, and finally the small connecting bridges of bone were broken or chipped away so as to leave a comparatively large aperture. In one Neolithic skull an elliptical opening is as much as three and a quarter inches across the greater diameter and two and a half inches across the lesser.

A curious feature is that while such trephined skulls are not so very rare among European Neolithic remains, little evidence of the operation, if any, can be found in the relics of the high civilization of Ancient Egypt.

Ancient Greece, which inherited many of the practical

arts from the earlier civilizations of the Near and Middle East and refined them into philosophical systems, laid the foundations of systematic medicine, as of other things, though there is reason to believe that the debt owed by the modern world to the Greeks in this respect, as in others, is not so great as earlier scholars, dazzled by the classical tradition, asserted. The great Hippocrates himself is an almost legendary figure and nothing of his writings of undoubted authenticity has survived. But in the volume of writings known as Hippocratic works there are many references to surgery of the head, and it appears that the trephining was well understood at the period, about 500 B.C., not merely for the treatment of gross injuries, such as fractures, but also for conditions which are now known to be due to tumours or disease of the brain, among them optic neuritis. There is also a suggestion that a similar operation, consisting of trephining the skull and removing the fluid within, was performed for meningitis—a development of surgery in modern times that did not take place till the last decade of the nineteenth century.

In general, the methods of these Greek practitioners had a close similarity to those of the unknown Neolithic surgeons, and according to modern views this is by no means as remarkable as it must have seemed to earlier students, since the tradition of European culture long antedates the formation of the early Greek City States of Ionia. The instruments were, however, probably much more refined. There is evidence that the Greeks used on their trephines a collar or stop to prevent the drill from entering too deeply into the skull cap so causing injury to the delicate brain beneath—again an anticipation of a comparatively modern development.

From Greece the centre of European culture shifted to Alexandria and Rome, but while these centres contributed much—especially Alexandria—to medical knowledge in

the ancient world, if tradition is to be believed, there does not seem any evidence to suggest that any sensational advance in brain surgery was made. The trephine continued to be used for relieving pressure or tension in the head, whether caused by injury or by other agencies, such as madness. Trephining, in fact, seems to have sprung into medicine fully armed like Athene and subsequent development appears to have been slow, until modern times.

The Middle Ages contributed nothing to medical science. It was a period of stagnation, and the only scientific authority was that of Aristotle whose assertions were considered as being of more weight than carefully observed experimental data. It was not, in fact, until the thirteenth century that trephining emerged again in the West, though round the Mediterranean, the invading, conquering Moslems had become the guardians of the ancient learning in medicine as in other things. Just as the navigational and astronomical knowledge which led to the great discoveries of the fourteenth, fifteenth, and sixteenth centuries were due to the infiltration of Arabian scientific knowledge to the West, so it is probable that the revival of brain surgery by Chauliac in the fourteenth century, and Paré and Andreas à Croix in the sixteenth had the same fountain spring. The works of these authorities reveal that though the operations may have been performed, they were cruel and barbarous and represented a sad decline from the standards laid down in the Hippocratic writings.

So, throughout the centuries, the practice of trephining with results that must have been very variable and, on the whole, more often fatal than not, was continued. The technique remained much the same as it had been in the times of the Greek medical writers and before that era. History records that the famous Prince Rupert, of the

House of Stewart, underwent a trephining operation with complete success, and Philip of Nassau, in the seventeenth century, gave a certificate to his surgeon that he had been trephined no fewer than twenty-seven times, with completely satisfactory results.

The eighteenth century added a little more to the scanty quota of knowledge, though not on the grand scale of its contributions to art and literature and the natural sciences. An outstanding figure was Pott of St. Bartholomew's Hospital, who made an important theoretical contribution by his assertion that the symptoms hitherto associated with head injury were due to damage of the brain itself and not to the fracture of the bony case. Petit, in France, extended the range of conditions for which trephining was advised and his works contain drawings of contemporary instruments of some refinement. The great John Hunter, tutelary genius of British surgery, records some trephining operations he performed.

So the story might be amplified, but the general theme is throughout the same. From the earliest times there had been brain surgery of a kind but it consisted almost exclusively of the use of the trephine or trepan (the former is a more delicate variation of the latter), and such progress as there was consisted of detail improvement and the purely empirical extension of the practice to conditions other than depressed fractures, in which trephining was regarded as essential.

It was not till the middle decades of the nineteenth century that real progress was made and the era of modern brain surgery was ushered in. It was a period of general advance in medicine and particularly in surgery. Pasteur and Lister had laid the foundations of aseptic surgery. Old theories, which seem to linger longer in medicine than in other branches of science, were being abandoned, and there was a much greater employment of a basically

scientific approach by experiment and observation such as had been insisted upon by Hunter and by the earliest (but not the later) Greeks long before him.

The real foundation stone of modern brain surgery was the identification of definite areas of the cerebrum with specific functions. From this it followed that pressure of any kind or growths such as tumours on these areas could produce symptoms that were not immediately referable to the brain. By the eighties the principle of cerebral localization had been generally accepted, and the natural corollary of surgical intervention was acted upon, the more so as aseptic techniques had immeasurably widened the field of surgery itself.

Today brain surgery has become a commonplace and the end of its development and field of application is not yet in sight. It is probable that with advancing knowledge of the physiology of the brain and nervous system, the usefulness of surgical methods will be much expanded and conditions now only alleviated by other means will yield to the surgeon's knife.

Since the brain is the controlling centre for the whole of the human system, it would seem almost axiomatic that any method of dealing with lesions of the brain would be a fundamental treatment, and experience suggests that in certain instances this is so.

Injuries to the head are probably the most usual reason for brain surgery. Even when there is no fracture, severe internal bleeding may result from a blow or other injury, and this begins the process of pressure on the brain. After a little while the clot forms and the pressure is increased. This may lead to the most serious symptoms, including loss of ability to use the limbs and even complete coma. Sometimes these signs and symptoms do not appear for considerable periods after the actual injury. In such cases the cranium is opened and the cause of the trouble is

removed, while other means of decompression, such as the draining away of the excess fluid, are adopted. In practically all such cases, the outcome is successful, provided the operation is made early enough.

Like other parts of the human body, the brain is subject to different kinds of infection and disorders of a physical kind, of which tumours and abscesses are the chief. In very many cases these yield to surgical treatment, some readily and with a high proportion of success, others less easily and with greater danger. But the proportion of successes steadily increases and many interventions that, only a few years ago would have been considered desperate measures, are today accepted as comparatively normal. Not the least of the surgeon's difficulties is that precise information of the condition and of variation in growths on the brain is difficult to obtain. For this reason, great judgment is needed by the brain specialist-surgeon, who has to select with the utmost care the precise moment at which to operate. Too soon may be as dangerous as too late, and there is probably no other branch of surgery in which more depends upon the recognition of the most favourable opportunity for intervention.

Growths on the brain lead to a variety of symptoms, among which headaches, vomiting, unstable or hesitant gait, and loss of function in one or more parts of the body are common. It is a well-known fact that, as a general rule, effects on one side of the body are due to abnormal conditions of the brain on the opposite side. Thus paralysis of the left side of the body is the result of some injury or disease of the right hand side of the brain.

In the early days of brain surgery, it was a universal rule that the cortex and brain substance should not be injured in any way, and that operations which did, in fact, involve these parts must have a fatal end. Recent experience has shown that this is not necessarily true, and

in modern practice quite considerable parts of the cortex have been removed.

Where this has been done, the results have been somewhat astonishing in the light of earlier views that seemed well supported by evidence. Not only did the patient live—an upshot in itself that seemed almost unbelievable—but in many cases there was not the complete loss of mental qualities that might not illogically have been expected.

Early workers on the localization of function to certain areas of the brain assigned speech to one particular centre, and aphasia, or lost or disordered speech, was held to be due to injury or deterioration of this centre. But later work does something more than suggest that there is no complete connexion between one particular area and the complex mechanism of speech and word recognition. The so-called speech centre can be damaged, but that does not mean necessarily either complete or partial loss of speech. Many centres of the brain do, in fact, share in this essentially human activity.

More recently still, evidence has been built up, largely through surgery, that the earlier view of localization is, in fact, not strictly true in the most literal sense. While the evidence that certain functions are connected with certain centres of the brain is indisputable, it certainly is not yet established that those functions are uniquely associated with those centres. Patients who have had large areas of the brain removed have still retained the ability to undertake certain activities which, on earlier theories, should have become impossible to them. Thus modern brain surgery, which was ushered in by the development of the localization theory, seems now to be casting some doubts on the complete truth of that theory. This is the sort of paradox which is not unusual in either medicine or the natural sciences.

It may be that the human brain, which has such remarkable powers of adaptability, is able to provide some sort of compensation within itself, just as in the other parts of the body, loss of function in one part is so often compensated by an increase of power in another. In valvular disease of the heart, for example, the weakness of one muscle leading to leakage is compensated for by an increase in strength of another muscle so that the heart still operates with tolerable efficiency. The brain is so complicated that similar compensation for function might seem very difficult, yet so little is known of the actual physiological working of the brain, despite the large volumes that have been written on the subject, that the possibility can by no means be ruled out. Indeed, it may be that the very complication of the brain may render some sort of compensation more easily affected.

In connexion with brain surgery, the curious duality which casts doubt on both the purely mechanical and the purely psychological theories of brain recurs in some rather interesting forms. According to the mechanistic outlook removal of, say, a tumour of the brain should, if the brain itself is uninjured, restore almost completely the patient's *status quo*. Thus, if the tumour or injury is responsible for the loss of certain bodily activities and still more for the inducement of various mental disabilities, it is argued that when it has been taken out and the damage made good, there should be a return to normality.

Speaking generally, this is true, but it often happens that there is a residual state of disturbance psychologically and this yields only to purely psychological treatment. This alone makes it clear that the problems of the brain are not, in the light of present-day knowledge—partial knowledge would be the better term—to be solved by any single theory, however plausible or self-

consistent it may be. The further we advance, the more this point is driven home.

To take but one example: Concussion of the brain, which induces deep unconsciousness and many attendant psychological effects, has been known for untold centuries, and it is probable that the men of the Neolithic period used their primitive trephines for its relief. Yet today, in spite of a long and wide experience and of immense research, no one can say with certainty how the effects of concussion are produced. Probably there is a direct effect on the neurones or cells of the brain, but here again there is doubt and confusion, for it is not known whether this effect is felt by all the cells or only by a certain few concerned with the control of the brain as a whole. This latter view, held by leading authorities, holds within it a rather startling suggestion in that it hints at their being within the brain some sort of controlling mechanism—a brain within the brain.

The only sure result of things like this is to increase our conviction that we are as yet merely on the fringe of knowledge of the brain and its workings. If we have discovered a great deal, what still remains to be elucidated is vaster yet.

In the research and knowledge of the future, the surgeon's knife will undoubtedly play a great part. For it is in surgery that the physical aspect of the brain is uppermost. The knife is a national weapon and its action is direct. So far it has done no more than to show itself to be not wholly sufficient, which in itself is an important lesson of the first magnitude.

The reverse effect of the duality may be seen when surgery relieves, as physical medicines do, symptoms which are predominantly psychological in origin—or psychogenetic, to use the technical term. Thus, in cases of schizophrenia encouraging success has recently been

won by operations on the prefrontal or association area of the brain, and similar procedures have also been used with some success in cases of obsession and hysteria. At present, these treatments are still in the experimental stage and can hardly be considered standard practice, but they do provide an interesting and further example of the inter-relation of the physical and psychological in mental affliction.

All this merely emphasizes the point already made that neither physical methods alone nor psychological treatments by themselves suffice for severe cases of mental illness, and that theorists who make exclusive claims for one or the other so far from helping progress actually hinder it by taking a one-sided and therefore erroneous view. It is one of the great virtues of modern psychiatry that it has already done so much to synthesize the many rival claims and attain something like a balanced system out of many conflicting factors.

CHAPTER VI

REVOLUTION IN PSYCHOLOGY

Many of the Freudian theoretical conceptions have gained general recognition and acceptance, but a large number have not; the majority of psychiatrists have not abandoned their minds to the full psychoanalytical doctrine.

Curran and Guttman,
Psychological Medicine, 1945.

Both the diagnosis and the treatment of this (the Freudian) school of thought appear to be based on hypotheses advanced in defiance of all the evidence. . . .

R. J. A. Berry,
Brain and Mind, 1928.

NOTHING could more clearly indicate the change that has come over the scene in psychiatry than the two quotations reproduced above. A period of only seventeen years separates them, though it is probably that even in 1928 Professor Berry was fighting a rearguard action from his own particular castle of mechanistic neurology. Modern psychiatry has absorbed a good many of the Freudian principles though, as our authorities quoted say, not all, and there has been a removal from a position of blank, unsympathetic negation to one of at least conditional acceptance. Perhaps the debt that modern psychology owes to Freud and his followers, both conformist and nonconformist, is greater even than Curran and Guttman so openly acknowledge.

It is not too much to say that Freud initiated a revolution in psychology and particularly in the psychology of mental afflictions, and from the first the impact of this attack on established ideas was so strong that it automatically provoked the strongest resistance. This must have been felt by the mechanists and other so-called

materialist schools and provided the reason for the readiness to dismiss the new ideas without so much as a courteous attempt to understand them; authority does not bring out the big guns to subdue a minor riot but only to suppress a major rising that threatens its position. Revolutionary ideas are always dangerous and extreme, but later they are absorbed by or absorb the best of traditional knowledge and practice to become, in their turn, generally accepted. So it has been in psychology. A good many of Freud's concepts are themselves still in dispute, and logic suggests that some may have finally to be rejected, but others have prevailed.

If, to quote Professor Berry, the Freudian school of thought appears "to be based on hypotheses advanced in defiance of all the evidence", then at least the psychoanalysts, looking at the psychiatric world today can say with Galileo, "*E pur si muove*". Psychoanalysis has survived what is probably the fiercest opposition ever made to any scientific theory simply and solely because, whether they defied the evidence or not, certain of its principles provided good working rules for diagnosis and treatment and for explanation of certain queer tricks of the mind. They worked—and continue to work; just as the earth continued to move despite the Inquisition which asserted that Galileo was a pernicious heretic uttering damnable doctrines.

New theories, especially in medicine, are nearly always thus received. Morton and Simpson had to fight for the recognition of anaesthesia, which some held to be against the will of God. Pasteur and Lister had to face ridicule for their work in the fields of bacteriology and asepsis. Perhaps the time has not yet come for anyone to assess the place of Sigmund Freud truly on the scroll of medical honour or even to suggest that he should be numbered among the greatest of originators, but at least it can be

said that without him modern psychology and psychiatry could hardly exist and many thousands today would probably be suffering all the torments of emotional and mental maladjustments.

Freud's new conceptions broke into a world that was stagnant as regards psychology. It is true that the period of their first enunciation, the close of the nineteenth century, was one of all-round medical advance. Brain surgery, as we have seen, was taking a great stride forward as a result of the establishment of the theory of localization, but much still remained to be learnt. Psychology in the scientific sense barely existed. Those who propounded psychologies were in the main philosophers whose material was metaphysical. The nearest approach to a scientific theory of mental behaviour was that known as the Association of Ideas, but it quite failed to explain even the most elementary of the human failings in the mental sphere.

This world of frustration, negation, and complacency was shattered by the introduction of Freud's theories. It was not simply that they were new. The nineteenth century prided itself on being a scientific age, even though its treatment of Darwin, Pasteur, and Lister, hardly suggested a complete absence of bias. New theories had in them the attraction of novelty. Freud's had something more than novelty. They struck at ideas so widely accepted as have almost a dogmatic force and, like Darwin's and Wallace's earlier theories in the biological sphere, they seemed to lower the prestige of man. To minds that had grown up in the atmosphere of nineteenth century pseudo-puritanism many of the Freudian conceptions were frankly disgusting.

Now disgust and a feeling of hurt pride are dangerous emotions to arouse. They do not conduce to clear thinking or logical deduction. Those who experience them

are not the best suited to make impartial judgments. They confuse their aversion with a demonstration that the object of their disgust is completely wrong. Examination of some of the earlier "refutations" of psychoanalysis astonishes not so much by reason of its violence, though that is surprising enough in alleged scientific literature, as by the fact that few if any of the writers seem to have had anything but the slightest knowledge of Freud's precise meanings.

Perhaps the founder of psychoanalysis himself did something to fan the flames. He stood quite firm in his attitude and would not retreat. His attitude was rather that of the man who says "take it all or leave it alone". In a long life devoted single-mindedly to ideas he formed quite early in his career he never retracted a single one of his major findings. Compromise was unknown to him. Before one can hope to be really well founded in psychoanalysis one has still to read his first considerable work, *The Interpretation of Dreams*, now almost fifty years old, and in his later works he asserts that he had never been brought to see that revision of any of his views was necessary. True, he modified his theories and practice as the result of his own experience, but he would never accept the contention that basic reconstruction was desirable.

This attitude seemed to many pontifical and a denial of scientific method, yet it is one which has been taken by all originators in scientific progress. Galileo recanted under stress of physical torture, but his mind remained unchanged. Since his time almost every pioneer has been ridiculed by those who feel that the sound prop of conservatism is being sawn in two as they lean on it.

Nor has Freud been well served by his followers, who have thrown themselves into the fray with the misjudged zeal of holy crusaders. They have split among themselves, and each sect has, as it were, like the sect of the church,

proclaimed itself the repository of the one and only true gospel. Psychoanalysis itself, a system introduced for therapeutic purposes, has been turned into an explanation of philosophy and religion, a theory of art (surrealism) and diverted into channels far removed from the original stream. Worse still in the medical field, the opposition of established authority opened the way for the quack and charlatan to practice; and this inevitably led to results at times disastrous which still further hindered the acceptance even of the clearly proved tenets of psychoanalysis after the heat of the first engagements had cooled and both sides were in a better temper to see clearly.

The more sensational aspects of psychoanalysis and particularly its emphasis on the sexual basis of most of men's mental activities attracted popular attention, and for a time, particularly after the Armistice of 1918, psychoanalysis became a popular fad attracting a large number of undesirable elements. Novelists found in it an easy way of avoiding the difficult work of character creation and observation of real life behaviour. Perverts, anti-social characters, and the indolent alike affected to find in it a final and incontrovertible explanation and justification of the lives they were living. It became an excuse for the grossest immorality. The special terms which psychoanalysis had, perforce, like all new theories, to invent, became misused, abused, and degraded. Even today, one rarely hears the word "complex" used in its true psychoanalytical sense.

Amid such a welter of strong emotion, of bickering between the worst form of camp follower, of popularization, and of ill-informed attack, psychoanalysis managed to survive; and thanks largely to the purity of thought of Freud, and of his only less great disciples who formed independent schools, notably Jung, Adler, and Rank, it has never been diverted from its true aim of being at

once a system of diagnosis and treatment for the mind in disorder. A careful reading of the original literature reveals that none of the true workers in this field of psychoanalysis or its offshoots has ever made the extravagant claims put forward by the more exuberant and less informed propagandists. It is, although melancholy to record, these claims that the chief opponents of psychoanalysis have been more concerned to answer than the original works of Freud and his associates; perhaps this is because both opponents and propagandists have it in common between them that neither fully understands his subject matter which, for varying reasons, they have not thought it worth while to study.

It is fifty years since Freud's first essays on psychopathology were published; rather less since he crystallized his experience and theories into a consistent system. It has been a half-century of storm, strife, and battle, the noise of which has, even now, not wholly died away. The die-hards, to whom the very name psychoanalysis suggests all that is worst in quackery and intellectual dishonesty, and the blind adherents who believe in psychoanalysis with all the fervour of a dervish on the Koran, are still with us. But if the echoes of controversy and worse still reverberate, at least the smoke has cleared away sufficiently for clear-minded people to see more distinctly and for the level headed to realize that, as usual in wars, there is something to be said for both sides, though more perhaps for one than the other.

Where, then, does psychoanalysis stand today? What place does it occupy in the armoury that the contemporary psychiatrist can draw upon in his fight against the forces of mental disorder?

The answer to that question is perhaps expressed best in the words quoted at the head of this chapter from Curran and Guttman's admissible little manual

Psychological Medicine. Certain conceptions of Freud have passed into the main corpus of psychiatric knowledge and procedure. Others have been rejected in the light of experience, though those which have been completely abandoned are relatively few. And there is a fairly large intermediate class of ideas on which judgment is suspended until further evidence is available. There are still psychiatrists who eschew everything Freudian—though an examination of their methods suggests that they have been not uninfluenced, albeit unconsciously, by some at least of the Freudian theories. On the other hand, there are a number of eminent psychiatrists within the medical fold whose methods are almost wholly psychoanalytical. The main body, however, take the middle course, realizing that there is no one way to the truth in so complicated a matter as the disorder of the human mind. If it seems to them that psychoanalysis is likely to help their patients, they do not hesitate to use it; but if there are other, better, and more direct helps available, then they use them. It is this eclectic outlook that is likely, in the long run, to lead to that synthesis of all psychological and neurological knowledge which is already overdue.

It is interesting to consider which ideas of Freud's have gained general acceptance and which have been rejected. Until we have examined these conceptions in more detail, a survey of this kind must be made in very general terms, but the most striking fact that merges is that the accepted and the rejected fall into two sharply contrasted classes. Those which are today acknowledged have to do with the actual mechanism of mental processes and treatment. The rejected or those on which judgment is suspended are the theories which offer explanations of the mechanisms and the results of treatment.

This is perhaps not so surprising as it seems at first sight. The accepted ideas are precisely those which

experience can test and prove or disprove. Matters of causation and explanation are more debatable, especially in connexion with a subject on which so little is known as the human mind. Thus, most psychiatrists accept with question today such concepts as "repression" and admit, even if only to a limited extent, Freud's basic idea of the unconscious. But very few of them subscribe, even in part, to the theories of the id, the ego, and the Oedipus situation. The full-blooded psychoanalyst will, of course, contend that it is impossible to accept the one without the other, but this is going too far. It was quite possible to accept the fact that sailors provided with lemons did not develop scurvy and even to advance theories on the subject long before the isolation of vitamins and laboratory demonstration of their action. In mental matters, the factors concerned are far more nebulous, and it is therefore easier to advance theories that may fit the facts of experience without any demonstrable and logical basis.

Another cause of misunderstanding and controversy is the fact that Freud and his followers took words in common usage and gave them a specialized meaning. To some extent this happens in all new sciences—one of the best-known examples being the transfer of the word broadcasting from the sphere of agriculture to that of wireless transmission. But in some ways the Freudian selection of words was more than unfortunate.

Controversy has nowhere raged more fiercely than over Freud's theories of "sexuality", particularly his contention of infantile sexuality. The full force of these theories will be discussed later. Here it is sufficient to point out that Freud used the word "sex" in a rather wider way than that normally used. Not only so, but that particular word is coloured by all manner of ethical, moral, and religious emotions which are in many cases strongly felt. Even

today it is a word that is likely to arouse the most violent reactions in many people's minds, yet how often do two people in a dispute on the subject agree on the meaning of the word, which has so many associations and overtones? The "sex" of Hollywood is not the "sex" of the writer on biology; and neither is the "sex" used by Freud. When, to quote again from *Brain and Mind*, Professor Berry refers to the "puerile indecencies of certain continental schools", clearly meaning psychoanalysis and its offshoots, he is not merely showing a complete failure to grasp the special meaning of the word in psychoanalytical literature, but also revealing a strongly coloured and biased attitude of mind towards the subject of sex which is hardly an aid to scientific judgment.

To sum up the position of psychoanalysis today, then, it may be said that it has failed in the claims originally made for it—though not by Freud himself—to be a complete and final explanation of the working of the human mind and the causation of mental actions. But, at the same time, it has contributed more than anything else of recent years in vivifying psychological medicine and raising it to new heights of achievement. This it has done in two ways: first and most clearly in contributing certain ideas and practices that have proved of immediate value in treatment and diagnosis and explaining certain mental mechanisms; and secondly by arousing debate and discussion in a field that had hitherto been left to philosophers and arid academicians to tend.

Quite definitely modern psychiatry is not psychoanalysis, whatever may be the popular view; for is it chiefly psychoanalytical. But, equally, modern psychiatry has at least one of its supporting pillars founded on psychoanalysis. Psychoanalysis focused attention on the need for treating mental afflictions as individual expressions of reaction to certain disturbing causes, whereas hitherto the

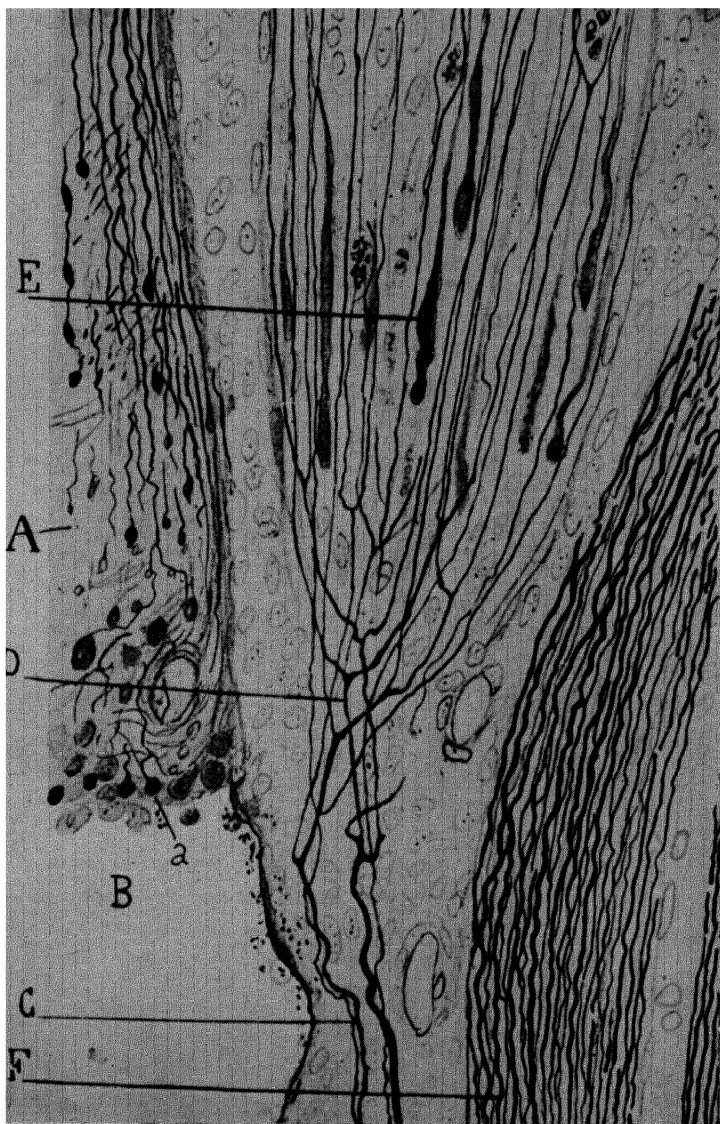
approach had been that mental disorders, such as schizophrenia, were definite diseases for which some one specific treatment must exist. It showed, too, that purely psychological treatments could be of value as against the prevalent ideas that physical therapies were alone of any practical use, and it checked the tendency to regard the mechanistic school, which saw in mind only nervous action, and the physical behaviour of brain cells, as the sole repository of truth.

It is necessary to see psychoanalysis against its true background, and that is why here I have dealt at some length with the controversies and debates that have centred round it, and still do, though not to the same degree of acrimony. Psychoanalysis has been too well publicized—and this applies whether the point of view be the general good of psychiatry or the particular good of psychoanalysis itself. Because of this there is the widespread belief that psychoanalysis *is* psychiatry, and psychiatry psychoanalysis; and nothing could be further from the truth. This belief very often makes patients who would benefit from psychiatric treatment hesitate to take advice. They have read of psychoanalysis and are aware that its pure methods involve a great deal of time with attendant expense. They do not realize that in very many cases there is little or no need for a full-dress analysis. Just as not all pains in the abdomen necessitate an operation, so not all psychological disorders demand the method that probes deep into the past and dissects the whole personality of the sufferer.

We have already seen in very broad outline some of the methods employed by modern psychiatry and obtained a glimpse of its potentialities and limitations. We have examined physical methods and surgery and also some of the purely psychological agencies. It is therefore possible to approach psychoanalysis with a more open



Magnificent specimen of the nerve cells of the brain,
greatly magnified.



Microphotograph of the spinal cord (the posterior nerve roots).

mind, knowing that the sole truth does not repose in it, and further to realize that it is neither a mental panacea nor a highly developed form of charlatanry. That being so, we can pass on to an examination of the typical and essential psychoanalytical conceptions, without any pre-conceptions that it is the whole of psychiatry.

Nor is there any significance in the fact that this examination occupies a considerable space. It does not mean that psychoanalysis is the most important part of medical psychology. All that it implies is that when we cross the frontier into the realm of psychoanalysis we are walking on entirely strange ground, which has to be more carefully mapped. The use of medicines is commonplace. Surgery has been accepted as a healing medium since before the dawn of history and is the oldest of the healing arts. Much of non-analytical psychology has been described as applied commonsense (which is not nearly so common as its name suggests). But in psychoanalysis we are dealing with utterly new concepts, the understanding of which is made more difficult rather than simpler by the amount of ill-considered popularization which has been poured out in the past twenty-five years.

Nothing is more important if psychiatry is to take its proper place in the medical services of the future than that the extreme views of complete denial and complete acceptance of psychoanalysis should be put in their proper place. Blind fear and blind faith are no greater helps in medicine, whatever its branch, than elsewhere.

CHAPTER VII

THE DISCOVERY OF THE UNCONSCIOUS

TO ATTEMPT to give a new survey of psychoanalysis is no easy task. Too much, as has been said, has already been written about it—and especially too much that is designed to act as propaganda, one way or the other, rather than to describe. Popularizations, too, have been overmuch concerned with the “sensational” aspects of the method—using that much maligned word “sensational” in its degraded journalistic meaning. The highlights of the Freudian sexual theories, for example, have been isolated, and what they reveal has been held to be the whole territory of psychoanalysis—than which nothing could be more ridiculous, biased, or dangerous. There have been books purporting to teach self-analysis by psychoanalytical methods without giving the reader more than a skeleton account of the system. This is perhaps the most dangerous activity of all. It may be true that one does not have to be an engineer to drive a car; but it is quite certain that one should be an expert before one experiments with high explosives, unless one is prepared to accept responsibility for self-destruction.

Freud's own works themselves are, as has been pointed out by friends no less than opponents, often hazy and his statements are not always clear—a circumstance which has presented opponents of psychoanalysis with a ready-made weapon of which they have not failed to make every possible use. Those of his followers are even more confusing, for the upholders of the pure Freudian theory follow religiously in the footsteps of their master even when he leads the way through an unmapped morass

which they think is dry land, while the dissenters are concerned to cry their own wares.

The difficulties of restating the principles of psychoanalysis, therefore, without bias are many, but luckily for the purpose of this little book we need concern ourselves with them only as they effect the mind in health and disease. The lush and variegated outgrowth of philosophical and aesthetic theories that has attached itself to the main tree need be given no more than a passing glance.

One of the widespread fallacies about psychoanalysis is the belief—asserted loudly by some of its upholders—that the whole system began as something not unlike a form of divine inspiration in the mind of Freud. Freud himself would have been the last to make any such claim, and indeed specifically denied it in his writings. Psychoanalysis grew out of the conditions and knowledge of the times. A crisis had been reached in psychology and especially in the psychology of deranged minds. There were various signposts pointing to fresh and unexplored paths, and it was the mission of Freud to decipher their inscriptions and lead the way. It may be that this guide himself stumbled and faltered as anyone must in unfamiliar territory, but he kept the main direction clear; if others among his party strayed along other tracks which he ignored that is not, in the nature of things, a cause for great wonder.

Freud himself has freely acknowledged that the genesis of psychoanalysis was in the work of Joseph Breuer, a physician of Vienna much interested in psychological cases, and a man with whom Freud worked as a young man. Between 1880 and 1882, Breuer had under his care a girl in whom hysteria was diagnosed, and by careful observation and the application of an imaginative genius that broke away from the stereotyped ideas of the time,

he made what seemed to him a significant discovery. If this girl were placed under hypnosis and in that state encouraged to recall incidents in her past life, the results were surprising: as she related certain incidents and relived them, a weight seemed to fall from her, and the hysterical symptoms gradually disappeared.

From this and other experience Breuer reached the conclusion that the awakening of unconscious memories that could not be recalled by any ordinary effort of the will could have curative properties. He told these theories to Freud, then on the point of travelling to Paris to study under Charcot, the famous French neurologist, and the young man found his imagination fired by new thoughts.

The most important part of this work of Breuer's was that it pointed to the existence of some factor in the mind which had the power of retaining quite vivid and complete memories of experiences very early in life, yet, at the same time, withholding them from normal consciousness. The full weight of this was not realized at the time and, in fact, it was one of the greatest of Freud's achievements that he later recognized it for what it was.

Somewhat similar results were published in 1889 by the French psychologist Janet, who brought forward a theory of split consciousness to account for them. It was not until 1893 that Breuer and Freud in collaboration gave an account of their experience with hysteric patients, by which time some ten years' work had been done. This was followed in 1895 by the famous book *Studies of Hysteria* by Breuer and Freud, which may be said to mark decisively the point in the main river of psychology at which the great Freudian stream branches off.

The discoveries at this time may be broadly summed up in this way. Various hysterical symptoms, among them such physical effects as nervous pains and headaches,

paralyses, and so on, were due to mental causes, often far back in the sufferer's life, which could not be called to memory in the ordinary way, and there was a definite connexion, sometimes simple but often difficult to unravel, between the cause and the form of manifestation of the symptoms. In these patients, the past haunts the present with a painful persistence. This conception is nowhere better put than in Freud's own writings, when he says: "The hysteria suffers mainly from reminiscences." On this basis a treatment known as *catharsis* was evolved in which the memories were recalled and their ill effects worked off either in hypnosis or otherwise and the normal function of the will and reason was restored. This reliving of the past and discharging its dammed up forces into regular channels is known as "abreaction"—which is one of the terms of psychoanalysis that has come to be widely abused.

Difficulties soon rose up before Freud as he proceeded to work on these lines. The whole success in the cathartic treatment was gained on hypnosis, then very much occupying attention in both medical and lay circles. But it was recognized then, as now, that not all people can be put into the hypnotic state; and where this could not be done, treatment was impossible. The barrier looked insuperable, but Freud discovered the way round it. He invented a method in which the patient was treated in the waking state. It is this which was the first psychoanalysis; and it is this which forms the foundation of psychoanalysis as a medical treatment today.

By urging the patient to remember and encouraging him in every possible way, Freud found that it was possible to reach the forgotten incidents as it was with susceptible people under hypnosis, and furthermore he laid bare one more interesting fact that was to form an

important foundation stone in the edifice he was to build—that he himself as the analyst had to work hard mentally to break down the barriers in the patient's mind to remember. These banished memories were painful; they had to be forcibly extracted, as it were, and Freud saw in this a possible reason for their summary ejection from the body of conscious memories.

Now in broad outline, one of the basic features of psychoanalysis—a feature recognized today by almost every psychiatrist—emerges: the psychoanalytical concept of *repression*. These painful ideas are something with which their owner desires to have no commerce, and he thrusts them out of the way. But the efforts of the conscious will are never entirely successful, and again and again the memories well up, only to be sent back again by some mechanism to which Freud has given the name psychic censor. A state of conflict is thus engendered, and it usually ends in compromise. The censor “converts” the memories into something else—a headache, a nervous tic, or the like, and this is the neurotic symptom.

Conversion takes many strange forms which it is impossible to deal with here; and any attempt to discuss a very complicated process in a few words would be disastrous. The general principle has been given and it must suffice. Hysteria and its ally known as compulsional neurosis, in which the sufferer feels compelled to perform acts that he recognizes to be stupid or irrational, are in reality a process of defence, the mind protecting itself against the intrusion of unwanted and painful ideas.

So far, the theory of repression has been all but universally accepted. There is ample evidence to show that the revival and “abreaction” of these harmful repressed memories does produce alleviation if not always complete cure of the neurotic state. It was, nevertheless, a complete

breakaway from older ideas and even from new ones that had been gaining currency, but despite opposition, Freud continued on his self-appointed path.

Experience suggested both new theories and new methods of using the psychoanalytical technique. One of the most remarkable was that the memory did not appear gradually or as a single event. It first showed itself in all sorts of different forms. All sorts of associations ebbed and flowed round the memory, like a surging sea over a covered rock, and it was only the closest observation that detected that the tide was falling. It was this discovery that induced Freud to alter his psychoanalytical technique and give it its essential characteristic. In the beginning, Freud had played an active part in the treatment, suggesting to the patient that the memories could and would be recalled. Now he became passive. He allowed, as it were, the stream of associations in the patient's mind to flow on automatically, without trying to direct them into any special channel. It was a great step forward, not only in the practical sphere of treatment but also in the development of Freud's own theories, for it led to his new conception of dreams—which reappeared again and again in the association ideas of patients—and so to that book which remains perhaps the greatest classic of psychoanalysis—*The Interpretation of Dreams*.

There has been a great deal of controversy about Freud's theory of dreams, but today that has largely died away, and the significance of dreams is pretty generally accepted. But at the time of its appearance, *The Interpretation of Dreams* seemed like the highwater mark of charlatanism, all the worse because it came from one who had worked with some of the most famous men in medicine. Freud seemed to be giving a pseudo-scientific welcome to ideas of dream significance held by the ancients; and this belief was heightened by his rather

unfortunate selection of descriptive terms from classical mythology.

What is the Freudian theory of dreams? Since it is one of the fundamentals of psychoanalysis it cannot be given in a few words—or even a few paragraphs; and those who wish to understand it fully can do no better than read Freud's own great work on the subject. But something must be said, and perhaps it may be put in this way:

The theory dismisses the materialist conception of dreams as a senseless conglomeration of uncontrolled thoughts associated with recent events. Dreams are one of the offshoots of repression—repression in the sense already described.. Memories are pushed back into the unconscious—and the unpleasant memories are pushed further back than the pleasant ones, as most people are aware from their own experience. This mechanism is general, and is not specially neurotic; it is only when there is a definite conflict in the mind that psychological symptoms appear. None the less, whether the repression be harmful or innocuous, it strives to come to the surface and one of the means it finds is that of the dream. But it does not do so openly. If it did, the whole purpose of repression—which is to save the conscious mind some form of pain or anxiety—would be set at naught. The dream reinterprets the memories in a concealed form, so that not even the dreamer himself can detect the true meaning of what is going on. Perhaps the symbolism or language of the dream can be likened to that form of euphemistic politeness which insists on calling a water-closet a lavatory.

Analysis of this symbolism is always difficult; skill in it is one of the essentials of a good analyst, and in the early days when Freud was evolving his theory, the difficulties were immense indeed. But as data accumulated and

experience was won, a new cardinal fact emerged. Not only had the dream significance, in that it was a distorted reflection of unconscious memories, but also it clothed a *wish or desire*, unrecognized by the dreamer. The dream is, in fact, a substitute realization of a desire that could not be granted.

The important point about all this is that many of these desires of the unconscious are of a kind that the dreamer would not wish to recognize. They would, especially in cases of neurosis, cut right across his ideas of right and wrong, his ethics, and his code of behaviour in the world of business and social affairs. More than that, they are very near to the core of the dreamer's personality; they clothe, in their queer imagery, the inmost thoughts. Thus not only are they, to the skilled analyst, an interpretation of the symptoms of neurosis and other disorders, but also an indication of causes.

According to the psychoanalysts, the dream has two faces. There is the manifest content: the obvious happenings of the dream as reported by the dreamer. Underlying this is the latent content: the true significance of the dream as reflecting the unconscious thoughts of the dreamer. It is this latent content which represents the wish-fulfilment. There is no grosser misunderstanding of the Freudian conception of the dream as fulfilling a wish than that the wish is expressed by the symbols remembered from the dream. The man who dreams that he cuts off the cat's tail is almost certainly not secretly inclined to cruelty; the amputation is a symbol of some other thought-desire which only analysis can reveal. Nor is it possible to draw up a chart of symbols and their meaning, on the lines of the twopenny dreambook which still finds a ready market among the uninformed, whose gullibility is today further played upon by references in the introduction to the completely misunderstood

theories of Freud. To each man his own symbolism, is an axiom of Freudian practice. There are general guides, perhaps, but no universal system.

There are, of course, different levels of dreaming, but the main theme of wish-fulfilment is there. When we dream after a highly spiced dinner that we are drinking deep at some clear fountain, our dream represents a wish that is far from repression. At the other extreme is the dream which seems a farrago of utter nonsense, since the desires it expresses are so heavily disguised. In between are an almost infinite series of gradations in which the latent content—the wish—is concealed more or less completely.

With these brief descriptions of the conceptions of the unconscious, repression and the dream, the three main props of the psychoanalytical system have been pointed out. Stated thus baldly they may not seem so extraordinary that the term revolutionary should be applied to them; but they do represent something entirely different from all previous psychological ideas. To some extent, too, they are today so familiar, if only in a vague way, through the part psychoanalysis has come to play in so many walks of life, that there is not now about them the shock of novelty.

But there is one fundamental aspect of Freud's psychoanalysis that remains today a centre of controversy, and that is still capable of arousing the strongest and deepest coloured emotions. That is his theory of sex in general, and of infantile sexuality in particular. If Freud had been content to put forward his theories without this conception, it is likely that after the usual conservative reluctance to accept new ideas, his work would have been incorporated almost without comment into general accepted medical knowledge. But his experience led him inexorably, as he thought, to these theories of sex, and

he himself, as do his followers, was unable to see psychoanalysis without them. It was largely on the problem of these theories that Jung, Freud's most distinguished disciple, broke away from the main line of development and proceeded to elaborate his own school of analytical psychology, as he calls it, with Zurich as its headquarters. But no defections, even of brilliant associates, and no amount of opposition, would persuade Freud that the rest of his theories, whether applied to the mind in health or disorder, were not meaningless if his theories of sex were abandoned or even modified.

Like other features of Freud's theories, this was reached by the way of practical experience. He was not the first, nor has he remained the only one, to assert that sexuality in its widest sense—the orientation of desire towards members of the opposite sex—begins at a far earlier age than puberty, and there is probably no one of us, if he be honest with himself, who could deny this out of his own living memory. To ascribe the whole theory of infantile sexuality to Freud is entirely wrong. His special contribution is to insist upon it as the foundation stone of so many neurotic disorders, for he asserts that sexual causes are the only constant ones of neurosis, and that “in a normal sex life there can be no neurosis”—a conclusion that many will find startling.

Putting the theoretical ideas aside for the moment, there can be no doubt that whether the method adopted be hypnosis (which is still used to some extent) or the psychoanalytic technique or one of its modifications, a sexual motive is found to dominate the concealed thought which it is the purpose of these treatments to bring to light. So much is agreed. Freud maintains, however, that there is *always* a sexual basis and that where this is not discovered the reason lies in that the analysis has not been carried far enough.

Closely linked with the sexual theory is the much discussed "Oedipus complex". This again is represented as a practically constant factor in all neurotic complaints, though opponents of the conception—many of whom gladly accept other of Freud's contributions—dismiss it as being interesting but too vague—they assert that it can explain everything and therefore explains nothing.

The Oedipus complex is a stage through which all young children are supposed to pass. Small boys have a pronounced preference for the mother, small girls for the father, and this is held to mask infantile sexual desires towards the parents of the opposite sex. The small boy hates the father because the latter denies him access to his mother. Connected with this are childhood fantasies about sex in which, very often, the father is believed to be inflicting untold sufferings on the mother during the sexual act. It is on how this situation is worked out that the psychological future of the child depends. Normally the affections shift away from the parents onto other people, though there may be some residue of the infantile situation in that the adult unconsciously gravitates towards—in the case of a man—women who to him seem to resemble his mother; and conversely for the woman. In extreme cases there may be "fixation". The desire refuses to grow up and remains in its state of attachment to the parent. This is a cause of neurosis and worse, and Freud saw in it an explanation of many of the sexual perversions and anomalies.

At this stage it may be well, in the interests of fairness, to dismiss the general idea that psychoanalysts hold psychological causes alone to be the cause of these perversions and inversions. In the case of inversion—homosexuality—Freud himself freely admits the operation of constitutional causes, among which may be the functioning

of the endocrine glands, but contends that in man, faced with so many barriers, these are not of themselves sufficient. It is the psychic cause which tips the balance one way or the other.

Nor is it right to believe that Freud sees sex at the root of every human desire. He admits that such acts as eating and drinking are not a disguised form of sexual satisfaction, as some critics of psychoanalysis seem to think.

The whole question of Freud's sexual theories is extremely complicated and any attempt at a short account is fraught with danger of misrepresentation. But one fact should be noticed clearly: the word "sex" is not used in the plain biological sense of an automatic urge for intercourse with the opposite sex. It means, to the psychoanalyst, the whole of the love life—all the higher desires, affections, and ambitions—of the individual. Ignoring this fact has led to much heat and controversy where none should have existed.

The general picture of the influence of sex on neurotic development may be sketched in roughly this form: The sexual impulse in the widest Freudian sense is the strongest in man, and it is precisely that which modern civilization most strictly limits and on which it is most likely to pronounce judgment. If the medieval Church regarded gluttony as one of the seven deadly sins, it is not so looked upon in modern conditions: a man may eat and drink as lavishly as he is able, for the only restriction on his activities is that provided by the means he has to obtain food and drink—or, in these days, the amount available. On the other hand, sex gratification is more difficult to achieve, and our educational methods still tend to associate feelings of guilt with it in the young mind. Thus, this powerful drive or instinct is repressed and inhibited at every stage; and in the long phase of

evolution from child to adult there are innumerable opportunities for it to go astray.

It may find a normal outlet and the individual may attain a state of balance with his environment. In extreme cases, the whole urge may be transformed—or sublimated, as the psychoanalysts say—into other forms, many of which have high social prestige attaching to them, as, for example, creativeness in art. In sublimated sex drive, Freud sees an explanation of religious ecstasy and poetical genius alike.

Here it is, then, that the core of the controversy about psychoanalysis is touched. The strict followers of Freud do not yield in upholding the original theory in its purest form. The various dissident schools of thought accept it to a greater or smaller degree. Jung, for example, has replaced the full sex theory by one in which he invokes the “libido”, which is a summation of all human drives and desires. Much argument and objective research will be needed before the matter can be finally resolved.

There are many details that have been omitted from this brief description of the cardinal factors of psychoanalysis—details which are, in reality, essential to a proper understanding of this branch of knowledge. Yet to attempt to insert them would be more confusing than helpful, unless each were discussed at some length, when it is likely that the treatment would become, like many an analysis itself, rather tedious. Sufficient has been said to give some idea of the underlying main principles, and the next step will be to see how these are applied as a means of healing the sick mind.

Before this is done, however, it may be worth while to stress again the fact that psychoanalysis was not some highly elaborated theory thought out in a vacuum, as some of its critics have gone so far as to allege, but has grown organically out of accumulated material and

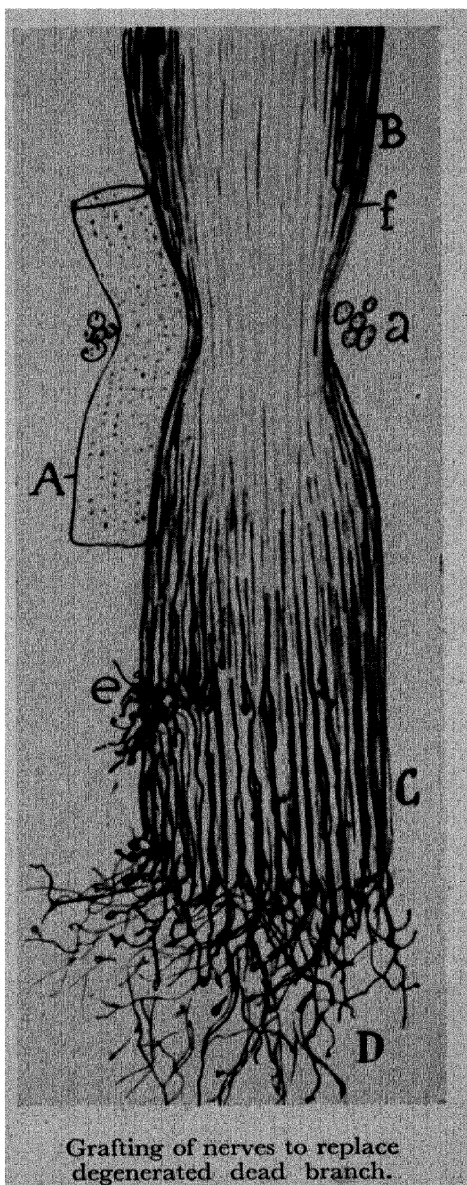
evidence, just as other sciences have evolved. Whether the data available are sufficient to warrant all the deductions that Freud himself and some of his co-workers have drawn from them is another question of such vastness that it cannot be dealt with here.

CHAPTER VIII

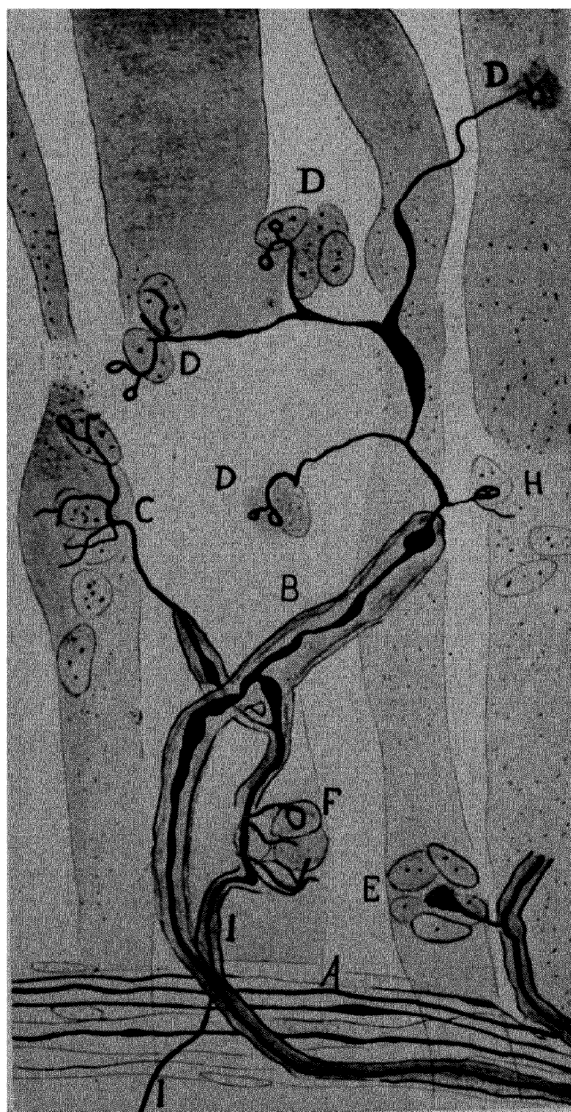
DISSECTING THE MIND

THE HISTORICAL glimpses of psychoanalysis in creation given in the last chapter have indicated how psychoanalysis grew up. It sprang from a hypnotic method employed not only by Breuer and Freud, but also by other psychiatrists, who, however, interpreted their experience in other ways. Freud evolved a system which eliminated hypnosis, and, by so doing, not only greatly enlarged the sphere of usefulness, but also enabled its fundamental aim by enlisting the help of the patient. Freud himself has never tried to disguise that the object of analysis was discovered by Breuer—the bringing into consciousness of repressed memories which have led to maladjustment of the individual both within his own mind and in his relation to the outside world. His own remarkable contribution has been, therapeutically, to develop a better and more searching technique for bringing those memories to light. Whatever the ultimate fate of the manifold theories and speculations incorporated in the full psychoanalytical exposition, there can be no doubt that in the practical field Freud has enriched psychiatry to a greater degree than any other single individual.

Let us see how this method works, not only because a description may help to sweep away some of the clouds surrounding psychoanalytic technique but also because it will serve to illustrate and drive home the teachings of the theory. The outline that follows is that which a complete Freudian analyst would adopt, and it does not follow, as we shall see later, that it would be the method



Grafting of nerves to replace degenerated dead branch.



Restoration of cut motor nerves. The letters indicate different stages of regeneration.

selected as a matter of course by a modern eclectic psychiatrist who considered major psychotherapy desirable in a particular case.

First of all, then, there is the role of the analyst himself and his approach to the problems involved to be made clear. In the early days of psychoanalysis, the doctor took a quite active part in the proceedings. He was trying to dispense with hypnotism and he resorted to direct suggestion. In other words he interposed his own mind between that of the patient and the symptoms, and led him along, sometimes gently, sometimes forcibly, towards goals which the analyst himself, as the result of experience, pointed out.

Several defects soon became apparent. For one thing, Freud believed that this was not the best way of dealing with the situation. His position as regards the purpose of treatment remained throughout that of his teacher, Breuer, and it is still a cardinal point of psychoanalysis that the symptoms disappear according to the degree of completeness with which the hidden cause of neurosis is revealed. Thus the whole intention is to unearth the repressed memories. But if the patient has these pointed out to him, if the analyst tells him what he *ought* to think and indicates the end of the path along which his memories are straying, then the patient is quite likely to accept these suggestions as genuine memories. He takes the analyst's word for him, and, as a result, he does not actively remember and the desired mechanism of cure is not brought into action.

In the analysis, then, the analyst is more passive than active, especially in the early stages. Never does he try to criticize or express judgments. To the analyst nothing that the patient may tell him is good or evil. He may at times offer explanations, but his aim is to make the patient discover things for himself and recognize on his

own the secret causation of his troubles. Least of all does the analyst seek to deal with situations on a basis of pure logic and reason, for he is dealing with matters that are, in themselves, irrational and beyond the control of reason. If they were not thus, the neurosis would not exist. In brief, the analyst's methods are always indirect; he never makes a bold frontal attack, the effect of which would be merely to increase the opposition of the patient's unconscious to yield its secrets.

How, then, is an analysis made?

It begins, in modern practice, much as any ordinary medical consultation with the doctor taking particulars of his patient. But the particulars for which he asks are fuller and cover a wider field. What he wants is as complete a picture as he can get of the patient's circumstances and environment—his degree of education, his mode of living, his general relations with those nearest to him, his school and family history, and so on. These early sessions are often of a more or less conversational nature, and have as their object not only the garnering of details but also the creation of an atmosphere of friendliness and sympathy. They have been introduced into the psychoanalytical technique only within comparatively recent years, and to some extent are common to all modern psychiatric treatment. Here, at least, in spite of what propagandists say, psychoanalysis has been ready and willing to learn from other methods.

When this stage is reached, the analysis proper begins. As a rule, the patient lies down and relaxes as much as he is able. The room is not brilliantly lit, and the analyst seats himself behind the patient's head so that he cannot be seen, and the patient will not be able to read, either imaginatively or in fact, any trace of judgment or comment in the analyst's features. Now the patient is asked to let his thoughts flow uncontrolled and to put them into words,

to suppress nothing that comes to mind however irrelevant, illogical, or trivial it may seem. This is undoubtedly difficult for the patient, and the success won in the first few sessions is comparatively slight, for the patient is unable to cast aside at once the habits of ordinary speech in which an effort is made to marshal ideas and memories into an ordered narrative and bring everything spoken under the control of the mind. He will, therefore, most frequently commence by telling little stories and he will try to draw the analyst into conversation and argument. These efforts are ignored by the analyst, who remains silent.

By degrees, however, the patient finds himself able to relax mentally more and more and to speak disconnectedly. He knows now that the analyst will not deride the images that come to his mind, however stupid they may appear, or even indecent or reprehensible. For the first time in his life, it may be, he finds that he is able to speak freely without entailing blame or praise. This is an important step forward, and one of the most important barriers has been overcome.

Outwardly passive, the analyst all this time is observing keenly. What the patient says at this stage is often not of considerable importance. The words are only clearing away the débris that has collected in the top layers of the mind over the secret cause of the neurosis. But his experience will discover, it may be, a general trend underlying what are apparently the most disconnected thoughts, and he will also gain a vivid impression of general character and attitude to life and its many problems as seen through the patient's mental eyes.

There will be times when the patient will suddenly change the whole direction of his narrative; there are others when he will remain silent and it seems as though the whole process has come to a stop. But it is just these sudden diversions and halts that are significant to the

analyst. They represent resistances. They are indications that the uncontrolled mind of the patient has been wandering towards a painful idea in the unconscious, and that when it has drawn too near the control mechanism is switched on. In some cases, of course, the silence or the change of topic are the result of conscious will. The patient may have been suddenly aware that he was about to reveal something he would prefer to remain hidden. But in most instances, and especially in the later stages, there is no such conscious interference with the free flow. What has come into action is a defence reaction, similar in most ways to the act of repression.

According to Freud's later technique, it is at this point that the analyst begins to abandon his completely passive role. He does not try to force the patient through these barriers to free expression, but he does point out the existence of these resistances and so makes the patient aware of them. Thus he becomes conscious of the forces at work driving back the unconscious memories; and when he has seen that, in most cases he can overcome the resistances without much further explanation. At first he will probably flatly deny these resistances, but later he may say, "Yes, now I see that you are right". By discovering the thing for himself he has integrated it into his consciousness and it has become again the subject of his active will.

Quite early in the analysis the patient will be asked to describe his dreams. This, too, often proves difficult at the initial sessions, but greater fluency comes later on. In the beginning very sketchy accounts will be given, but by degrees these will become amplified. As a rule, the analyst makes no attempt to interpret these dreams until he has gained some idea of the general trend of his patient's unconscious ideas. He is learning the language, so to speak, of this particular person's unconscious, and

until he feels himself reasonably proficient, he prefers not to risk guessing at the meaning.

It is when the patient has revealed a great deal of himself that the most difficult phase comes for the analyst. He is now interpreting dreams and the patient's associations—as the uncontrolled thinking is called—and he has to take the greatest care to ensure that he stops at interpretation and does not bring in suggestion. His experience has probably already indicated where the trouble lies, and he knows perhaps better than the patient what revelation will come next. But he must not say so. The whole object of the analysis is to make the patient remember for himself and see the irrational underlying stratum of his trouble. A suggestion at this stage might well defeat the whole campaign by reinforcing the hold of the repression on the patient's mind. Interpretation is something which the analyst undertakes to help the patient by explanation; the patient may accept or reject the explanation—he will probably reject it first and accept it later—but this attitude can come only from himself. He must not be told what is right or wrong. It is the actual act of remembering on his own, with the help of explanations, that constitutes what has been called “de-repression”, which is the basis of psychoanalytical treatment.

In association, whether of dreams or thought images, the analyst picks out some item in the image which seems to him of importance. As manifest content it may be quite trivial, but so far as the latent content is concerned, it may be crucial, a point that the patient may not at first understand. The patient is then asked to “associate” on this item—to give the analyst the uncontrolled thoughts which it evokes. In this way, by explanation the patient is brought a step nearer to his own self-knowledge and the final act of de-repression.

Sometimes the patient asserts that he does not dream. This is not unusual in the early stages, but if it persists the analyst is not only deprived of perhaps the most valuable key to the lock of the secret door but also made aware that very powerful censorship is at work. Some analysts, therefore, resort to the method of the "artificial dream". The patient is asked to relate what he thinks might be a dream he has had. This is then subjected to interpretation just as though it had been an actual dream. This method yields surprisingly good results and has proved very valuable. Often it stimulates the patient to remember his real dreams which are so purposefully forgotten.

The other grave difficulty for the analyst is the phenomenon which Freud calls "transference". In the beginning the patient has a neutral attitude towards the analyst, except in so far as the initial talks have promoted a feeling of confidence and friendliness. But later the patient starts to project his own morbid fantasies on to the analyst. He may accuse the analyst of the most outrageous behaviour, or adopt attitudes towards him which are quite unwarranted, such as abject terror. He may become insulting. This situation is an intensification of something which, as Freud himself has pointed out, is quite common in everyday life; we all tend to project our own failings on to others. The transference is sometimes difficult to handle, but it is of the greatest value in showing the way the patient's unconscious mind works.

Transference sometimes takes the form of the patient becoming utterly dependent on the analyst, and this is indeed a danger signal if it is allowed to go too far. In some cases it amounts to emotional and erotic desires centred on the analyst, and these may become not only a stumbling-block in the path of cure but also a serious embarrassment to him in his social and professional life.

The patient may call at all manner of inconvenient hours. Women patients, failing to get any response to advances prompted by this situation, sometimes fling wild accusations of assault and seduction against the analyst, who must, however, remain calm and unaffected. He sees in this behaviour evidence of some hidden cause he has not yet laid bare, and the work must continue until that end has been gained. Occasionally it happens that this cannot be done. Yet he does not give up hope until everything has proved unavailing.

The two aims of the analysis are, then, first "de-repression"—the bringing to light of the unconscious, irrational causes of the neurosis, and the breaking of the transference situation. The latter often proves the more difficult and it is primarily to this that failure, when it occurs in the analysis of cases suited to psychoanalytical treatment, is due.

Many picturesque descriptions of psychoanalysis have been given in order to make its explanation easier, but more often than not they are misleading. None is further from the truth than the idea that it is "surgery of the soul". Surgery is an active intervention; it involves cutting and removal in the vast majority of cases. But there is nothing remotely analogous to this in classical psychoanalysis. The analyst does not metaphorically cut bare the patient's mind and then forcibly remove the psychic growth that is hampering the function of the individual. On the contrary, he eschews anything that even vaguely resembles such methods.

Suggestion plays no part in psychoanalysis. That cannot be stressed too often if there is to be any understanding of the truth about this controversial subject. There is only one suggestion which the analyst feels entitled to make to a patient, and that is simply that he can and will recall the memories that afflict him. Yet, if

there is anything analogous to surgery in the mental field, it must be suggestion. If, then, suggestion be the mental knife, psychoanalysis, having tried it in the early days, has thrown it away.

The technical description of psychoanalysis is that it is a reductive treatment. Only here is there the slightest parallel with surgery, for it might be likened in a very general way to the minor operation of lancing a blister and letting the fluid escape. But even that is only a very rough analogy, and it does not take the inquirer very far.

It is, in fact, impossible to find a workable analogy to describe psychoanalysis, for the simple reason that it is something standing right outside ordinary medical procedures, and in the wider field outside the ordinary workaday world of reason.

Psychoanalysis, as a theory, is one of causes. As a method of practice, it aims at discovering those causes and bringing them to light. That it has many successes to its credit cannot be doubted, but whether the explanation its upholders give of these successes is correct cannot be tested in any convincing way. Other methods, if tried, might have yielded the same results in many cases though not, probably, in all.

There is certainly something very curious in the undoubted fact that revival of long-dead memories has a curative effect on the mind, and it is this which has proved a stumbling-block to so many people in their efforts to understand and appreciate psychoanalysis. This is true as much—or perhaps more—of medical men as of the laymen, yet it is not really inexplicable or even recondite. A disordered mind is one which has acquired bad habits, and a habit is something which, in the technical sense, is practically beyond conscious control. (The complicated process of walking is an acquired habit, and a conscious attempt to analyse it leads to stumbling and loss of power

to move.) What analysis does is to bring this bad habit into the light of day where the conscious will can see it for the irrational and dangerous thing it is; and when that has been done the conscious reasserts control over something that should never have passed beyond it.

That is why in psychoanalysis the actual discovery of the cause by the patient himself is regarded as of so much importance. In ordinary everyday life, it is common experience that mere denunciation of habits (in the popular sense), like over-smoking, has little effect, but realization by addicts on their own part of their harmfulness does lead to improvement.

Another fallacy that is widespread about analysis is that only one memory has to be recalled. Those with a little knowledge of psychoanalysis are apt to ascribe to one cause the various disorderly symptoms shown by a neurotic or psychotic. This is not so. Often the analyst finds that, having revealed one apparent cause, there is another and deeper one lurking underneath, and it is for this reason that psychoanalysts always insist that nothing but full analysis, laying bare the earliest childhood memories and experiences, is useful. Apparent cures effected by less deeply searching methods merely alleviate some of the symptoms without eradicating the basic cause.

Nor do psychoanalysts, or at any rate those who follow Freud most closely, deny that constitutional physical factors can play a large part in mental disorder. They do not claim that the psychoanalytical treatment is the final cure. True, they assert that when the analysis has been brought to a successful conclusion, then the mind is functioning normally once more and has been freed of its inner tension. But they admit that physical factors may remain, and these will have to be dealt with by physical methods. The true psychoanalyst claims much—perhaps more than his brief entitles him to—but he does not go to

the lengths of representing himself as a substitute for all medicine and surgery. He claims that his method is based on scientific evidence and he has no wish to have it confused with faith healing and similar cults which derive from emotion more than fact.

There are some critics who have contended that psychoanalysis defeats itself in that if—as we shall see later—it asserts there must be repressed material unconsciously affecting everyone's actions, then the analyst himself must be so influenced when he makes his interpretations and particularly when he finds himself involved in the transference situation.

There is some truth in this, though it ignores several points. The chief of these is that every reputable practitioner first submits himself to exhaustive analysis before he begins work as an analyst. Thus he is fully aware of his own mental bias, even if that has not been swept away by the analysis. More than that, analysis of this kind does a great deal to induce the right frame of mind in the analyst—the habit of being entirely unshockable and unmoved, in his work, by moral or ethical considerations and judgments. If one knows that one is oneself the prey of unconscious thoughts and desires one would be ashamed to confess in public, one acquires a proper humility when others reveal the same traits. This is perhaps a detail, but it is worth stressing.

From this very bald description it will be seen that the analysis may well be a long-drawn-out affair. In favourable circumstances where the painful thoughts have not been strongly repressed, the analysis may quickly begin to yield results, but where repression has been strong and the memories have been thrust deep down into the unconscious, it may last a very considerable time—perhaps a year or more. In such a case the resistances will be strong, and as each is broken down it is discovered to be

a defence work covering yet another inner one. Each has to be reduced in turn.

Few people have the time, in these modern days, for continued treatments of this kind; fewer still, perhaps, have the means to bear the cost of protracted highly specialized therapy. It is for this reason, among others of a more technical kind, that modern psychiatrists resort to the full analysis only in very severe cases, and then resort to various short cuts, which, however they may offend the pure Freudians, do not seem to yield greatly inferior results. The place of psychoanalysis in contemporary psychological medicine will be discussed in a later chapter, however.

Finally it may again be pointed out that what this chapter has described is the pure Freudian analysis in which the analyst is entirely passive and the curative process arises spontaneously from the patient's own abreaction or reliving of the mental experience which gave rise to his disorder. That it has been given at this length is by no means an indication that it is regarded as the primary or most useful treatment open to modern psychiatry. It is an important one, not only in itself but also because of its influence on general psychological thought. "Whether one agrees with psychoanalytical theory in whole or in part, or not at all," said Dr. E. B. Strauss, one of our leading psychiatrists, "one must admit that Freud gave the whole of psychological (and related) thought a new direction from which there is no return." That is profoundly true, and no polemics or denunciations can alter the fact. If the whole technique and theory of Freudian psychoanalysis were swept away today, its influence would remain throughout psychology, whether medical or non-medical.

CHAPTER IX

NEW IDEAS OF THE MIND

PSYCHOANALYSIS created the furore it did simply because it was a complete breakaway from hitherto widely accepted ideas in both medical and non-medical psychology. It has been said that Freud's work was the last great achievement of the Victorian school of scientific thought, which gave everything a causal scheme and traced everything according to a fixed pattern. This is too sweeping a generalization, which, like so many about psychoanalysis, has done more harm than good. In fact, it is not far short of a gross distortion. It is true that psychoanalysis is causal, in that it seeks the origin of all symptoms and disorders and even actions of everyday life in causes that have gone before. But it is no blind mechanistic scheme that determines the behaviour of the human mind in the same way as Newton's Laws of Motion were held (till the days of relativity) to determine the movement of massive bodies.

One of the most fundamental differences between Freud's and the classical medical psychologies was that it introduced the principle of individual causation, which has proved so fruitful in subsequent curative work. The classical psychiatry has dealt principally with general conceptions of disease and sought to classify the symptoms in the mental field in the same way as they are classified and recognized in the physical side of medicine. We have already seen that modern psychiatry has left that mistaken notion behind, and now speaks of collection of symptoms which may mean one thing in one patient and something

different in another. This change is undoubtedly due first of all to the influence of Freud.

Before Freud, the symptoms were taken for granted in any particular mental condition, and that was enough. A schizophrenic would, if his case developed, begin sooner or later to suffer from delusions. But Freud's psychology went further. It did not dispute—how could it?—that delusions characterized a form of mental affliction that was called schizophrenia, but it did not let the matter rest there. It asked why, in each particular case, the nature of those delusions was different. There were as many different forms of schizophrenic delusions as there were schizophrenics.

The reason must be something to do with the individual. The cause must lie somewhere in the individual's own mental experiences and make-up. There, Freud argued, it was the duty of the medical psychologist to study each case on its own merits, to trace those delusions back to their cause, not in an assumed disease known as schizophrenia but in the individual himself.

Applied first to hysterics and neurotics, this new line proved, from the first, very productive. The way had been paved to it by the work of Breuer, but it was Freud's own contribution to put it on a logical level. This is, in fact, the keynote of the whole of psychoanalysis, and from it have sprung most of the features that distinguish psychoanalysis from other forms of psychology.

It was a product of this conception of individual causes for individual symptoms—a conception that today is recognized as operating to some extent even in established physical diseases, each one of which runs its course not to a standard pattern but to a general form conditioned by the patient's idiosyncrasies—that the idea of the unconscious came so soon to the fore. If the patient had symptoms which owed their origin to forgotten experiences

and memories, there must be some area of the mind where those memories resided. To this unspecified region Freud gave the name, first of subconscious, and then, more accurately for his own purposes but perhaps more confusingly for the layman and the non-specialist, the "unconscious". The term subconscious is one which survives today only in popular literature.

These two principles, then, of individual causation of mental disease and of the unconscious are the very root of psychoanalytical theory and practice. As we have seen, the whole object of the classical analysis is to bring to light those hidden causes in the unconscious so that they may be dealt with in the light of day; and it is a surprising fact, demonstrated both by the Freudian and other methods, that their revelation does have a strong curative effect in itself.

Freud, however, pushed his theories further. He developed his theory of the unconscious (which was not in itself brand new, but had often been discussed, but never in a way so scientific and logical) into a new conception of mind as a whole. There is the id, or unconscious aspect of the mind, wherein reside all the "lost" memories, and where the life of the individual is on a level of instinctive satisfaction. There is the ego, which is the sum of the complexes that make up the individual, itself conditioned by the passiveness or activity of the material repressed into the id. And there is also the super-ego, an area somewhat reluctantly marked out imaginatively, in Freud's later work, wherein are supposed to be the faculties of moral judgment and the like.

This scheme, which is highly theoretical, has given rise to a great deal of discussion and controversy, and probably no one outside the ranks of those who accept the Freudian doctrines *in toto*, as a form of inspired revelation, accepts it as it stands. The super-ego has been the subject

of much criticism, and indeed is considered by some to be contradictory to some of the basic principles of psychoanalysis itself. The individual's outlook on moral and ethical problems is, in psychoanalytical theory, the outcome of the balance of his repressions, themselves the product of childhood memories and experiences to a large extent. A moral department of the mind would therefore seem unnecessary. Freud himself ascribes the operation of the super-ego to memories of the father and his authority over the child, which seems to bring the super-ego back again to the id or unconscious. This is one of those highly speculative aspects of Freudian theory which have done so much to harm the whole in the eyes of those who are not accustomed to have philosophical entities and theories mixed up with scientific argument and reasoning.

To the id are assigned many important functions and aspects, such as the "pleasure principle", which in early psychoanalytical theory was considered as the driving force of everything, and which was, in turn, conditioned largely by sexual (or love) factors. But this conception has been elaborated and complicated by the introduction of a "death wish", which seeks to assert that in every individual there is a desire to die as an escape from mental and physical problems.

These are all debatable and theoretical subjects at which we can do no more than glance here, but so much is made of them by writers on psychoanalysis that brief reference must be made to them if the topic is to be understood at all fairly. They are best studied in Freud's original works—though his own habit of mixing philosophy and scientific method is at times highly confusing—and in some of the more restrained commentaries.

It is well known that from the original psychoanalytical school under Freud at Vienna various groups have sprung

off and begun an independent existence of their own. There is perhaps nothing remarkable in this. All scientific theories, the more so when they impinge upon philosophy, are subject to review when the basic facts are open to question and must be inferred. The extraordinary feature about the psychoanalytical offshoots is that each claims to be the true and final doctrine.

Best known among the dissenting groups is that of Jung, which has its headquarters at Zurich. Jung's system is strictly known as analytical psychology, to distinguish it from the Freudian original, to which the name psychoanalysis is alone strictly applicable. It differs in matters of both method and theory. The theory is not of outstanding importance to modern psychiatry, but one feature at least of the method has commanded widespread support and is used even by those who, in all other matters, would describe themselves as complete followers of Freud.

This method is the "association word test". By this, it is claimed, resistance and points of discomfort in the mind of the patient can be readily brought to light. Each patient is asked to respond to a series of keywords, one hundred in number, by giving the first word or image that comes into his mind. As a rule, these answers are plain straightforward associations of ideas, such as any normal individual might make if the association test were a parlour-game—which is, indeed, what so many regard it—so that they far more readily co-operate than in the rather exotic procedure of the full analysis.

It is not always, however, that the answers come either spontaneously or quickly. The reaction time is carefully noted by the aid of a stopwatch and it has been found that two and two-fifths seconds can be taken as the "normal" time for reaction. If a longer time than this passes before the association is conjured up, it is taken as an indication

of a resistance. It is a somewhat surprising fact that occasionally a patient can give no association at all on a certain word or group of words, and this is taken as indicating that a very powerful resistance has been located. The nature of the associations is studied, both individually and as a whole, and in this way an idea of the mental colours of the patient's mind is obtained.

When the whole list of one hundred words has been gone through, the series is repeated from the beginning. Any deviations from the answers originally given are noted, as well as the reaction times as before. This is known as reproduction. Failure to reproduce fully or a marked difference in reaction times from the original ones is also held to be of significance, as what Jung calls a "complex indicator".

These points of resistance are then attacked on lines which are already familiar. The patient is asked to associate freely on the ideas about which he showed reluctance. But the analyst takes a more active part. It is held that this method more rapidly sketches out the general nature of the problems that have to be solved in each particular case, and the analyst is therefore able to give a stronger lead to his patient in order to bring the repressed memories to light. It has proved very successful in many different types of disorder, most notably in cases of schizophrenia.

When Jung enters into the somewhat tangled jungle of psychoanalytical theory, his findings are, to many, less tenable than those of Freud. His analytical psychology has a definitely metaphysical aspect, and he accepts some ideas which, on the face of them, do not seem capable of scientific proof. The simpler points of disagreement between Freud and Jung are that the latter finds the causation of neuroses and other mental disorders not in the past but in the present, which activates residual

memories of the past, and also in placing less emphasis on the most disputed part of Freudian theory of sex. Jung introduced the conception of the libido, which may be taken as not unlike the sex instinct of Freud, but composed of all the instinctual drives, such as hunger and the will to survive. This last mentioned aspect of his theories has caused them to be more favourably received in certain quarters than the sexual theories of the Viennese school.

It is when Jung goes beyond these detail dissensions that the field of controversy is entered. Accepting the basic conception of an unconscious in the individual, he advances further and asserts that there is, in addition to this individual unconscious, a group or race unconscious, from which the general pattern of behaviour is derived; and he takes this further still by maintaining the existence of a human soul. It is just here that analytical psychology ceases to be a subject capable of examination by purely scientific criteria. These are metaphysical and philosophical matters in which Jung is merely one of the later advocates putting old ideas into new dress.

Like psychoanalysis, analytical psychology has given excellent results in many cases of psychological disorder, and it is wise to differentiate clearly between its clinical methods and its special theories. The theories, like those of Freud, have been put forward to explain results attained in practice, and often the theorist has gone far beyond the incontrovertible inferences in his data. That Jung has made great contributions to psychology cannot be denied, and the strength of his particular school has been great almost from the first.

Another very well-known and much publicized psychological theory often confused with psychoanalysis is the individual psychology of Adler. This is the theory which has given the world the much abused term "inferiority

complex". Rejecting alike Freud's sexual theories and Jung's ideas of a libido, Adler believes that the chief cause of neurosis is a feeling of inferiority in relation to the world—in other words a maladjustment—and he sees in neurotic, and indeed in many normal aspects of character, evidence of a "substitute structure" which has been mentally built-up to offset this feeling of inferiority. Thus the undersized man physically inferior to his fellows very often creates a substitute structure of aggressiveness and assertiveness which, at times, may go to dangerous extremes. In normal people this substitute structure may be a very valuable thing, enabling the individual to adapt himself to his environment, and it may be the driving force of a form of ambition; but in neurotics it has gone too far and become a fantasy world of the mind.

This idea of neurosis and its character is the nearest approach in the Adlerian theory to Freudian concepts, but for the rest, Adler's psychology can hardly be included in the psychoanalytical family. It differs from the latter very markedly in its theory of the causation of neuroses. Since Adler rejects the idea of the unconscious and the libido, it is obvious that his theories can have nothing in common as regards causation with the other schools. He sees the explanation of neurosis in the future instead of the past—in a fear arising from inferiority that desired ends and goals will never be achieved.

Jung, then, sees neurotic causes in the present, Adler in the future; but Otto Rank, another famous worker in this field, goes to the other extreme. He takes the causation of psychological lack of balance back further even than Freud. Freud affirms that childhood sexual or erotic experiences are the cause of neurosis and indeed of normal psychological growth and development. Rank believes that psychological experiences during birth and even in the mother's womb may have lifelong effects on the

individual. Once again, one finds theory disputable while practice has proved beneficial, for Rank has developed a method of analysis and treatment in which the analyst takes a very active part indeed, using suggestion of all kinds; and this has been a means of considerable good in the hands of experienced users.

Explanation in brief of these psychological theories, all more or less assembled round the central core of psychoanalysis brings to light the astonishing looseness of psychological terminology. This is something which has added considerably to the confusion and controversy which have been created. Nowhere is this looseness more apparent than in the word "complex".

Freud uses this word sparingly and almost exclusively in one connection only: the Oedipus complex. This is a group of ideas all closely associated, which are repressed into the unconscious as a whole. Even then, the true Freudians are more likely to talk of the Oedipus situation rather than the Oedipus complex. It was Jung who introduced the word into his own psychology as a basic term to fit his new theories. He believed that it was not single ideas or experiences which were repressed, but whole groups of associated ones. These were, so to speak, split off as a whole and thrust back into the unconscious. This is the sense in which most careful writers use the word today. A complex in this sense, which always contains ideas that are repugnant to the self, may be recognized in consciousness though it is not usually so. One of the things unconscious psychology really needs is a better sorting out of basic terms.

The special term "inferiority complex" of Adler is a development of the use made of the word by Jung. Strictly, Adler uses the term only for an inferiority reaction arising from some physical defect. In Freud's psychology it is used also, and then it denotes a feeling of

inferiority that comes from deprivation of love and care during childhood, which in bad cases may lead to the formation of mental disorder. There is indeed no term in psychology which has been more abused or misused. In popular usage, "inferiority complex" is the label tied on to any feeling of inferiority or incompleteness. But this is quite wrong, even from the point of view of Adler, who made the phrase popular. For, if there is a strong inferiority complex there is probably also a very highly developed substitute structure which would hide the conscious feeling of inferiority from its possessor. Many psychologists hold, in fact, that the possession of a true inferiority complex may be a powerful drive to achievement through the desire of its owner to prove to the world that he is not the inferior creature his unconscious thinks he is.

Today it is almost impossible to find a way through the maze of popular misconceptions built up round these various psychological theories. The ideas of Freud, Jung, Adler, and Rank, have become so tangled that useful discussion has almost become impossible, and indeed critics are often concerned to attack a system which exists only in their own minds as an amalgam made up of snippets cut off from all these theories. The plain fact appears to be that the psychology of the unconscious is a highly technical subject which is not likely to gain from popular discussion, any more than surgical technique derives any great benefit from lay opinions. The obvious is not always the true picture. Psychoanalysis should be kept for what it is: a medical treatment that is safe only in trained hands and under controlled conditions. It can be beneficial—of that it seems impossible to harbour any doubts today—but also it can be very dangerous, no matter what the specific technique adopted, if it is applied without wide knowledge of psychiatric problems.

Though the various schools of unconscious psychology try to keep their own theories in mutually exclusive watertight compartments there is gradually developing a body of experienced psychiatrists who are avowed psychoanalysts but who are building up an eclectic technique. In the main these take as their basis Freud's methods, though they do not hesitate to make use of other methods as necessary. It is only in this way that the full benefits of the various schools can be realized.

These eclectic methods provide what the psychiatrist calls major psychotherapy. In general psychiatric practice, it is held that major psychotherapy is necessary only in mental states that are highly abnormal and complex. One of the reasons for this is that the conditions in which analytical techniques can be profitably followed are comparatively rare in mental illness. To begin with the patient's mental condition must be such that he can give some co-operation at least in the procedures of association, dream recollection, and the like. This is obviously impossible where the intelligence is below normal. Another point is that analysis is desirable only in younger adults. The effect of analysis on an older person whose whole mental pattern has become fixed and without the power of readaptation may well be disastrous. Where the cause is frankly physical and amenable to physical treatment—as, for example, one or other of the forms of shock therapy—then an analysis is waste of both time and money.

One other factor is of some importance. As the result of that popular belief which thinks of psychoanalysis as the only form of psychiatry, many patients bring to the psychiatrist a preconception that it is only by analysis that they can gain relief. Frequently this is a mere desire to put off the evil day and to keep real treatment at bay by fruitless discussion.

Major psychotherapy, then, is today ordinarily resorted to only in cases in which the cause is internal mental stress rather than in outside factors. The person at war within himself is more likely to yield to analysis than one whose trouble is that he is unable to adapt himself properly to his surroundings.

Nor is there any one method of major psychotherapy selected before all others. The treatment is made to fit the case. As a rule every effort is made today to save time, and for that reason any serviceable means is turned to account, whether it be hypnotism or association, dream analysis or suggestion. The Freudians say that an analysis should be carried back as far as possible and that when this has been done the cure is almost automatic. Experience does not confirm this view wholly. There is often no gain by taking the analysis further back than the discovery of the immediate cause of the disorder. It does not follow at all that because a patient has been shown the cause—even if it seems an irrational one—of obscure behaviour, he has the mental capacity and reserves of character to solve the problem it presents. Hence it is that the psychiatrist today more often than not rounds off the analysis by positive measures designed to lead the patient to a more balanced way of life. It may be that to do so, the patient may have to throw overboard a way of life that has become second nature to him; and to do so puts a greater strain on most people than they are strong enough to bear.

This, of course, involves the difficulties of the transference situation. The patient may see the error of his unconscious ways, and he may think that his psychiatrist's interpretation of them and outlook is the right one. But when he goes out into the world again he cannot rely all the time on the doctor. He must be educated to stand again on his own feet, just as the patient after a major operation often has to be taught to walk again and needs

massage and remedial exercises to bring his muscles back to a co-ordinated working system.

In modern psychiatry, therefore, psychoanalysis and all its offshoots, as regards their techniques at least, have a definite and established place. Reliance is placed heavily upon them, but not to the exclusion of all others. Even in minor psychiatry the influence of the unconscious theories are to be traced, and it may be said that this indirect influence of psychoanalysis permeates the whole of modern psychological medicine and is more powerful than the direct impact of psychanalysis on psychiatry.

It may be of interest to round off this chapter by returning briefly to an earlier theme: the so-called war between mechanistic and psychological forms of thought. After what has been said about the work of Freud and his associates, it might well appear that the older view of the completely irreconcilability between the two was the right one.

It is more than doubtful whether any but a few diehards on either side would oppose this view. Freud himself was a neurologist and endeavoured repeatedly to connect his own theories with the purely mechanistic ideas of neurology. Later workers have gone far towards creating some sort of union between what look like diametrically opposed views.

Psychoanalysis does not rule out physiological knowledge of the brain, nor does the physiologist when he traces nerve paths and the operation of the brain necessarily deny what psychoanalysis teaches. The reason for the thought that the two are opposed arises from some confusion of thinking. Psychoanalysis is an attempt, more or less successful, to explain the way in which the mind works. Neurological physiology is the science which seeks to discover *how* the mechanism of the brain operates. There is nothing antithetic in all this. The neurologist has

to admit the existence of something which he cannot define or isolate which he calls "nerve energy"—the driving power behind the complicated mechanism of the brain. The psychoanalyst talks of forces in the psyche which repress. These may well be two aspects of the same thing.

Again, the psychologist sees in memory a kind of renewing the life of established habits of action in the brain cells. This is not at all opposed to psychoanalysis. The materialist psychologist thinks in terms of conditioned reflexes: that is to say, certain cells in the brain and nervous system act in a determined way to a certain stimulus as the result of established habit. At least one of the interpreters of Freud has pointed out that the object of analysis is precisely to set in motion conditioned reflexes which have become inoperative or whose path has become distorted.

There is, then, nothing mutually exclusive between these two schools of thought, and the idea has largely arisen because traditional psychiatrists and neurologists failed to make any distinction between Freud's theories and speculations on the one hand, and his practical technique on the other. The time is overdue when the whole subject should be examined in this light, and some sort of synthetic explanation evolved by the only method capable of claiming respect and acceptance in the scientific world: that of experiment. A very valuable attempt has been made in the philosophical sphere by the Frenchman d'Albiez, and his work should be followed up by scientific research. That the majority of psychiatrists today accept psychoanalytical methods without necessarily subscribing to its theories shows that there is valuable work to be done in this direction; and it should be associated, as was suggested in the earlier volume in this series, *Secrets of the Human Glands*, with work in the still largely unexplored field of endocrinology.

The human body is one. The old distinction between mind and matter, body and soul, is nowadays regarded as untenable; and until that is recognized more clearly than it is by theoretical psychologists, progress is likely to be slow and the present-day confusion and controversy will not be dismissed.

CHAPTER X

THE UNCONSCIOUS AND THE NORMAL

ONE OF the most important contributions of Freud to general psychological knowledge was that his theories broke down the artificial barrier between the normal and the abnormal in the mind. Till his ideas became widely known it was more or less axiomatic that a disordered mind was necessarily diseased, and it was thought that it was possible to draw a line and say that on one side a person was normal, on the other abnormal. This idea still permeates the legal attitude to mental disorder, and it is for this reason that modern psychiatrists, in the main, do not agree with the legal definitions of insanity either in relation to ordinary affairs or to crime. In view of the advances made in psychology in the past fifty years, it is, indeed, rather more than astonishing that the rules which guide Courts in deciding whether a guilty person is insane or not were laid down something like a century ago, and that the Criminal Lunatics Act was passed as long ago as 1880.

Freud soon found that the theories he had reached in regard to the behaviour of neurotics applied strongly to the behaviour of so-called normal people, from which it followed that there was no dividing line between mental illness and mental health, but that one shades off by imperceptible stages into the other. This is a view which has always been implicit in common sense, however scientific jargon may have tried to hide it. To the average man the behaviour of genius is often indistinguishable from madness; and indeed many great creative artists have shown a degree of mental instability which, if they had

been undistinguished citizens, might well have seemed to call for psychiatric treatment if not for "certification" and immurement in an asylum. At a lower level, the eccentric individual and the absent-minded professor were types that could not be classed as "normal" yet were obviously not abnormal.

In his book, which forms one of the foundation stones of psychoanalysis *The Psychopathology of Everyday Life*, Freud referred many of the strange little happenings of normal existence to the motivation of the unconscious. A great deal of this book accords with common sense and only some of the theoretical explanations were looked upon as curious. He contended that we remember only those things which are pleasurable to us or at any rate do not inflict a wound on our self-esteem, and that we tend to forget more readily—or repress—those which do hurt us. Analysis seemed to bear out his theory of the unconscious cause of strange forgettings and even slips of the pen or the tongue.

Difficulty in recalling a name is due more often than not to some unfortunate association with the person concerned in our minds. We may not dislike the person; he may have done us no active harm; but we may unconsciously envy him, or he may revive some unpleasant memory of our childhood which the mechanism of repression will not let us see clearly. So we tend to drop him out of our conscious memory. So with slips of the pen and tongue; some factor associated with what we wanted to say makes it unpleasant to us. The transformations that a story passed from mouth to mouth undergo may be due to the fact that each successive narrator puts the stories into the mould of his own unconscious, toning down those parts which are unpleasant to him and perhaps embroidering those which seem to his unconscious an expression of his wishes. This book of Freud's is one

of the most fascinating and most worth reading of all his writings.

But here in this repression of the unwanted into the unconscious, precisely the same mechanism as brings forth mental unbalance is revealed. Nervous habits, mannerisms of speech and action, inability to recall certain facts or events to mind: these are just the same as the inability of the neurotic to face up to reality. The only difference between the neurotic and the normal is one of degree. In one sense, every one of us shows neurotic symptoms.

This is an important step forward in psychological medicine, for it at once destroys the old belief that deep-seated mental disorder is incurable. Moreover, it offers us an interesting and scientific explanation of the affairs of everyday life, and one which can be accepted in general without subscribing either in whole or in part to the basic theories of Freud.

The belief that there was no fundamental difference of kind between abnormal and normal individuals, however, had its dangers as well as its benefits. Some of the more extreme advocates of the new psychology did not hesitate to say that no one, under modern civilized conditions, could be fully normal until he had been analysed. There was propaganda to promote the belief that all adults should be analysed in order that they might fully realize their innate abilities.

This, however, was obviously going too far. It is probable that there is no one individual who, physically, is perfect. But that does not mean that every person in the country should be placed under medical treatment for the purpose of eradicating some minor defect of physique or function which causes him no discomfort and which does not interfere with his daily affairs. It is only when disability or ~~disease~~ begin to have an adverse reaction on

the person that skilled attention is needed. In the cases of mental disorder that means that psychiatric care is necessary only when the inability to make proper adjustments either internally in the mind or with the environment become a hindrance to a full life.

Nevertheless, some psychoanalysts still maintain that universal analysis is necessary, and go so far as to allege that those who oppose it should be the first to be analysed in order that the reason for their irrational opposition should be disclosed!

Such a view is held only by extremists, and there is a growing inclination to the view that analysis should, in fact, be reserved for serious cases only. It is in fact recognized that it may be in the worst interests even of a sufferer to remove his neurotic symptoms.

This is a point of view worth examining in greater detail, not only for itself, but also because it indicates the modern tendency to incorporate psychoanalytical theory into general scientific knowledge and to abandon the fallacy of judging psychoanalysis only by psychoanalytical theory. According to the psychoanalysts, neurosis arises from repressed emotional experiences, usually in childhood, which have had some damaging effect on the peace of the mind. These memories do, in fact, try to reappear, but are transformed by the censor (or the preconscious) so that the individual does not recognize them. This may lead in normal individuals to purposive forgetting or nervous habits, and in the true neurotic to advanced symptoms.

But all this is a state of balance—or compensation, as a biologist would put it. The nervous habit, the frame of mind and attitude to the world, which may be conditioned by the unconscious, is a protective mechanism to save the individual from the devastating influence of his own memories, and within limits compensations are usually for

the good of their possessor. Without those compensations, whether of mind or body, the individual might well become chronically incapable of anything.

One of the remarkable things about an analysis is that the patient tends so hard to cling to his fantasies. Once this was regarded as the result of some unknown mechanism, but now a more simple and rational explanation is the one more generally accepted. The neurotic clings, almost pathetically, to his neurosis for the very practical reason that it has proved of the greatest value to him. A wooden leg is not as useful as a real leg; but a one-legged man would not throw his away voluntarily unless he was sure that he would be provided with something better to replace it.

So it is with the mind or the psyche. For years, it may be, the mind has lived in a world which may not be the world of reality, but may be the only one in which relative peace and contentment can be found. Curious behaviour, even of a mild kind, may be simply that which is looked upon as more normal conduct but is unpleasant to the individual or rouses feelings of anxiety and fear. The neurotic is one that runs away from life and finds relief in a world of his own creation; he cannot adjust himself to reality. No amount of demonstration that the fanciful is really irrational is going to force him, by itself, into accommodating himself gladly to a world from which he has already fled and which he has regarded with fear or suspicion for so long.

It is for this reason that, today, the desirability of analysing people who have got beyond the threshold of middle age is considered more than doubtful. It may be true that the person concerned is not at peace with his environment, and his neurotic symptoms may be quite marked. But he has lived with those symptoms, which are his world, for very many years, and he is not likely to adapt himself readily to new conditions of thought and

action as a younger person would. Little purpose would be served by attempting to alter his character, which has become set, at this late age, and indeed reviving the past might even have a most undesired effect. "The day's life is for many people such a bad dream that they long for the night when the spirit awakes," Jung has said in one of his illuminating passages. The human being shorn of his quasi-neurotic fantasies may well be like Caliban who "cried to dream again". The modern world is not so great a paradise that it can be lived in rationally or without the divine gift of imagination.

For it is precisely modern civilized conditions which are the most prolific causes of mental unbalance or disorder; and none of the many psychological theories emphasizes this more than Freud's. Looking at the world for the moment solely through his eyes, we see that it is the sexual side of life—or, more correctly, the erotic side of life—which is the most subject to restraint and inhibition under contemporary conditions. The child is corrected easily and naturally enough on all matters but those connected with his erotic leanings. These are very often made the subject of sweeping and, to him, unreasonable condemnation and when the child grows to adolescence and adulthood, he still finds the old taboos and barriers at every turn. He has no freedom in this direction, and as a result his unconscious becomes more and more oppressed by the weight of repressed material.

If we shift our viewpoint for a moment and take the view of Jung, we find much the same thing. We need no longer look on the world through spectacles tinted with the erotic urge alone. There are other instinctive factors in man. He desires food, but he must win it; he cannot take it by strength of arm, as the savage and the animals do. All his instinctive acts are inhibited to a greater or lesser degree and so his repressions multiply. Jung says that this

process is continuous, a never-ending cause of neurosis. "Neurosis," he says, "is as much a product of 'now' as 'then' . . ."

Look at it again in the light of Adler's individual psychology. More and more the power of external authority presses down on the individual in modern civilization. The State and all manner of organizations demand this or that form of obedience. At every turn the individual comes up against prohibitions and inhibitions, all of them expressing power greater than his own. Is it any wonder that he develops feelings of inferiority in the face of them? So neurosis grows. He feels that all his efforts cannot attain the end he desires. He is crushed and broken.

It is all a matter of degree. Civilization stands round the individual like a fence, and those who try to break through the cordon do so at their peril. When the attempts at escape are harmless, both to the individual himself and to those around him, what benefit will he gain if he is stopped at every turn? Probably the result would be only a greater sense of frustration and oppression. The merely neurotically inclined may in such circumstances become the full neurotic, a burden to himself and others.

Some eminent psychologists, among them that brilliant American woman, Dr. Karen Horney, contend that the typical personality of today is neurotic. She holds, as everyone must, that it is civilization which produces this personality and, in effect, that it is a species protecting compensation for the burdens and disabilities which modern city and industrial life impose upon human kind.

Here, as it does at so many points, psychology and particularly medical psychology impinges on sociology. The psychiatrist can treat the individual. If he is a psychoanalyst he may claim that when he has dug down to the deepest levels of repressed memories he has the cause

of the mental trouble. But has he? Is he not only at one stage of an infinite regression, a journey back through cause to cause that has little prospect of coming to an end? What he has found is not the final cause—science does not seek to find final causes today—but the cause of one particular person's reaction to certain conditions. The distinction is a very important one. The true villain is seen to be not the irrational working of a child's mind but the operations of a civilization that makes unreasonable demands on human beings.

The alteration of those conditions cannot be the sole work or responsibility of the doctor, but of society as a whole. The psychiatrist must necessarily be one who upholds fervently any campaign for a better world. He is concerned with the products of mental slums as the doctor in the big-town hospital is concerned with the physical victims of material slums.

But this is perhaps too depressing a picture. Let it be granted that neurosis and neurotic personalities are part of the price we pay for civilization with its great cities and its corporate activities. Is the choice, then, between the life of the "noble savage" and a state of chronic repression and inhibition?

It would be folly to maintain there was any such extreme contrast. For the matter is not, even by psychological theory, as bad as that or as simple as that. The repressed material may be turned to other account, and it may well be good account. Neurosis is not necessarily evil, and it is one of the fallacies of the extreme psycho-analytical school to maintain that it is.

There is a theory of Freud's which is of considerable interest in this very connexion. It is the theory of sublimation, and to it may be referred much of the creative urge of man. The superficial reader of Freud may come to the conclusion that the only normal man is the one

who is able to give free rein to his instinctual sexual urges, and it is this interpretation which has done so much undeserved damage to psychoanalysis as a whole. Nothing could be more distorted. Freud is not an advocate of unbridled licence, however much some intellectuals and perverts who may have found an apparent justification for their conduct may think. He merely contends that the sexual urge is paramount. He distinctly points out that that urge may find many outlets.

Sublimation is the process that turns this urge into other channels. Freud refers it all to the Oedipus situation, but there is no need to accept his theory in that respect before one can think that sublimation occurs.

Let us take a simple and often quoted example. A boy is placed in conditions that give him a predisposition towards homosexuality. His childhood experiences are such that his subsequent sexual development does not turn outwards in the normal way towards members of the opposite sex. Now it would seem as though there were two courses open to this person. Either he may develop into the homosexual of the grosser sort and become a misfit in society—not least because of the repressively cruel attitude of conventional morals and law towards this condition, which is pathological—or he may “sublimate” his homosexual tendencies in other directions. Thus, it is a more or less established fact that many first-class schoolmasters are homosexuals at heart. They do not actually realize the fact, for it is repressed in the unconscious and it has not come to the surface in the form of overt homosexual practices. They feel happy in their work of being among boys and teaching and helping them.

This is a form of sublimation which, according to the psychoanalysts is not at all uncommon. Many other examples could be quoted, but they will be found throughout the history of the world: the records of men and

women who have turned "normal" instincts into something bigger and higher. In Freudian language they have found a secondary outlet for their sexual urges and have put that secondary social objective into a place of greater importance than the primary one. Freud and his followers find this mechanism at work everywhere and use it to explain almost every kind of human behaviour, from the creative genius of a Shakespeare to the masochistic ecstasies of the flagellant monks. They see in it the root of music and poetry, painting and religion.

While the theory can be carried too far, for pushed to extremes it is not so much sublimation, or the turning of urges into a social realization, as sexual gratification in disguise, there is no doubt that, as stated by Freud, the theory is a very valuable contribution to the theory of behaviour; and it stresses why the ideal complex-free, uninhibited individual of the psychoanalyst's dream is one of those abstractions that would be no more use to mankind than Rousseau's Natural Man.

What is quite clear is that, admitting the existence of the unconscious as most psychologists do today, there is every reason to believe that its influences are felt as strongly and as continuously in everyday life as in disordered states, and that the whole problem of mental disarray is, in fact, one of degree. The unconscious is not something redundant which becomes of importance, like the vermiform appendix, only when it is diseased, it is a vital driving force in all human endeavour, and it is necessary for this to be recognized.

Though full self-analysis is, to all intents and purposes, impossible, and attempts at it may well be dangerous, a great deal may be learnt from mild self-analysis when anything goes wrong in one's daily mental life. There are some people who are "moody", finding themselves at one time capable of prodigies of work and at another almost

incapable of focusing their attention even on the daily newspaper. As a rule, their states are accepted as a matter of course. But a little self-analysis shows that these states all have their reason. A slight, a shock to the person's *amour propre*, a disturbance of some kind—any 'one of these and similar events may have been the trigger which set the mechanism of distortion at work. If he is slighted, the individual may feel unconsciously that it was ever thus; everything he does is to no purpose and his best efforts are rejected and undervalued: why, then, work at all? On the other hand, quiet conditions or a little recognition will enable them to rise to unexampled heights.

It is surprising that while so many people will spend a vast amount of time and trouble on medicines to cure some slight physical defect or disability, even if it be only constipation, they take so little trouble over their minds. They find themselves frustrated and depressed, unable to work and immediately try to find relief in some tonic. Now this is not unwise; lowered physical condition carries with it as a rule lowered mental condition. None the less, a little time spent in self-analysis of a superficial kind will often reveal that the cause is psychological and its recognition quickly restores the mind to normality.

There is, indeed, a great need not only for psychological education on general lines but also on self-psychological care. More is being done today in this direction than ever before, but there is still room for great improvement. It is not sound common sense to pay lip service to the old idea of a "healthy mind in a healthy body", if the healthy body is believed to provide automatically the healthy mind.

The process of sublimation and the redirection of instinctual urges into fresh directions can be seen on many different levels, and in the minor as well as the major

affairs of life. It is an old, oft-repeated story that a man thwarted in love will turn his whole attention to some social cause and do great things; but that is another example of sublimation. On the other hand, frustration may turn the urges into the most undesirable directions and by a process of what might be called negative sublimation produce the anti-social criminal. There is always a choice in the psychological field.

The importance of these sublimations and allied mechanisms is nowhere brought out more clearly than in times of war. During the war just ended, the medical sections of the Services found that the impact of psychological causes is even greater than had been supposed. It was the discovery of the last war that those two afflictions of the serving soldier, shell shock and disorderly action of the heart, were psychological and not physical in origin. In the late war, this lesson was repeated and amplified, and indeed it was found that the number of psychiatrists of experience was not sufficient for the number of cases needing attention.

Frustration and regimentation are the main features of war. The inhibitions that civilization normally imposes are increased many times over in their effect. When to these restrictions of all kinds are added the nervous strain and shock of bombing on a civilian population and the use of such suddenly appearing weapons as V2 rockets, it is not surprising that psychological symptoms are more common today than ever before.

From the knowledge gained in war and in the years between the two wars social and industrial psychology should gain greater recognition. Industrial psychology is, in fact, doing valuable work in providing means whereby the monotonous routine of modern factory life and the like can be ameliorated. Not only that, but a recognition of its worth means that more candidates for appointments

are subjected to tests for psychological as well as material fitness for the work. There is nothing more likely to produce in time a psychological casualty than a person condemned to do work which, though he may be proficient in it, is distasteful to him. Often this distaste may be unconscious and give rise to the symptom known as industrial fatigue, which, in its turn, is the prolific cause of accidents, sickness, and absenteeism, on a grand scale.

There is then, it may be repeated, no phase of normal life in which psychological forces are not at work. It is, in fact, surprising that it took the revolutionary theories of Freud to startle the world into recognition of this fact. For, if man is distinguished from the other animals by the possession of a rational mind, then it follows that that mind must play an all-important part in his affairs. Its elusiveness, the impossibility of defining it, even, in precise terms, and the controversy over its action, should only be spurs to greater research; for until man masters his mind, and particularly its unconscious working, as he has largely mastered his body, he cannot hope to realize his full potentialities or to devise a way of life that will enable him to progress on rational lines.

Nowhere is this sort of research more obviously needed than in the controversial sphere of mass movements and the like. That these are unconsciously conditioned is now obvious to most of us. The success of Nazism in its own limits was due to the keen recognition of the value of psychological methods, which struck at the mind no less than the body and produced men and women capable of living in a fantasy world. In a rather different way, though on the same foundation, the practice of modern advertising is carried out.

Psychoanalysts claim that their theories explain wars, mass hysterias, religious ecstasies and the like. Some of their theories are plausible even if they lack scientific

verification. There is here a vast field for study, for the gathering of data, and for its scientific analysis. Time and money so expended might repay a higher dividend than any of the measures designed for "security" which seem, in the long run, merely to lead to ever more terrible wars.

CHAPTER XI

TYPES AND TEMPERAMENT

TRUE SCIENCE is never content when it is dealing only with individual examples. It tries always to reduce the behaviour of scattered individuals to an ordered law applicable to them as a whole. Its function is to abstract the underlying principle from what it sees. The revolutionary psychology of the unconscious has been paradoxical in that while it has advanced a series of principles claimed to be of universal application, it has stressed the importance of individual interpretation as never before. On the one hand it has made more secure the chain of causality; on the other it has exalted the importance of dealing with each human being on the merits of his own case.

In this, of course, psychology is in line with the rest of medicine. It is, in fact, this duality which prevents medicine from ever becoming one of the exact sciences. The human being is too variable an entity, too complicated a system, to be treated in the same way as comparatively simple things like molecules or particles. Nevertheless, the effort to generalize, even if only on the grounds of probability, is not only made but has proved of the greatest worth. Medicine, whether it is dealing with the body or the mind, cannot be forever empirical. It must have some guiding rules and logic, provided it is remembered that these are no more than guides and that exceptions may be as numerous as conformities.

In psychology, therefore, apart from the creation of individual theories such as Freud's and Jung's or Adler's, attempts are made from time to time to classify and

generalize on the relation between physical and mental characteristics. Jung himself has proposed a theory of types which, like so many of his theories, is somewhat involved and philosophical. It has gained no general acceptance.

More interesting from the practical point of view is the classification introduced by Kretschmer to indicate the relation between mental trends and physical appearance. These types were evolved as the result of a wide experience with mental patients, and later he found similar characteristics among the general population.

All human beings are grouped into one of three classes to which the names asthenic, athletic, and pyknic, are given respectively. These names, like so much of modern psychological technical terms, have been widely used in modern literature, notably by Aldous Huxley, but not always with their correct significance.

The Asthenic Type, or leptosomatic, has, as its physical features, a combination of tallness and thinness. ("Lepto" is of Greek origin and indicates slender.) The hands are, as a rule, long, and the feet, too, show the same sort of pattern. It is a characteristic of asthenics that they appear taller than they are because of the higher ratio of height to breadth over the average. The skin shows peculiar features being pale, and the members of the class are flat-chested. With all this goes flabbiness and under-developed muscles. No one could say that the asthenic individual was an ideal specimen of manhood.

Mentally, it is held that asthenically built men tend towards schizoid minds and may even, in cases of psychological illness, develop schizophrenia. To employ another type term, which we shall briefly discuss, asthenics are inevitably introverts. They are ready to indulge in imaginative fantasy and to turn their thoughts inwards on themselves, and they readily become at loggerheads with

society. Revolutionary intellectuals are often of this type.

The athletic or athletosomatic type is typified by the rawboned Scot or typical "Nordic", beloved of Nazi pseudo-philosophy. There is strong muscular development, and the body is very well-proportioned. Physically these individuals may be called perfectly developed, and the type is more easily recognized on sight than described in words. Here again there are tendencies towards schizophrenic manifestations if mental disorder shows itself.

Very different is the pyknic type. Here is a short, squat individual, with a prominent and domed abdomen, short neck and round face. The type has been admirably summed up as that of the "sixteen-inch neck in the fourteen-inch collar". The pyknic is the typical "good fellow", jovial in temperament, and the "life and soul of the party". Hands and feet are, as a rule, small, and in early years there is a certain grace of movement. Pyknics are essentially extroverts. But when mental disorder occurs, these good-humoured specimens tend towards the somewhat serious condition of manic-depression, in which periods of elation are alternated with others of acute and morbid depression.

In a general way this threefold classification has proved very useful. But it is entirely fallacious, as with all these things, to believe that there is anything fixed or inevitable about the characteristics of each class. The biologist can examine a skeleton and place it exactly in its proper place in the zoological classification, according to its species; he can say that it will be a herbivore or a carnivore and he will know from the examination whether the animal lived in trees or in the water or flew through the air. But because a man is pyknic it does not follow that he is a potential depressive maniac; and the manic-depressive psychosis is by no means unknown among members of the athletic class.

These types are, in fact, no more than guides. They may help the psychiatrist in the sense that they may be a warning; but recognition of a man as belonging to this class or that is not the end of diagnosis; it is in fact only a beginning, which may be of little more practical importance than taking down his name and occupation. The asthenic may have a stronger tendency towards a certain kind of mental disorder, but the actual disorder he has developed is very likely to be something quite different. Typing may be valuable as a preliminary help, but very dangerous if it is taken as a short cut to diagnosis. The individual is never exactly true to type, and even a person who shows pyknic build and pyknic mentality never quite conforms to the ideal type as laid down by Kretschmer.

Of more general use perhaps are the classes extrovert and introvert, used principally in connexion with Adler's psychology, though now generally adopted. They are less subject to exceptions than the classes just described, but that is precisely because they are less defined and therefore broader in their embrace. They describe merely basic attitudes to the world and do not seek to associate a physical build with a certain kind of mentality.

The extrovert is a person whose interest lies chiefly in the world around him rather than in his inner experience. He is in the psychological sense well adapted to his environment and readily adapts himself to the circumstances in which he finds himself. Like the pyknic type, he is the good fellow and the good mixer, not too much disturbed in his mind by the subtler aspects of life. He finds his most suitable lines of activity in occupations such as those of the fighting man, the business man, and anything in which action rather than reflection plays the predominant part.

His converse, the introvert, shows diametrically opposed features. He turns his mental eye always within, and he is

thus more liable to become the victim of mental disorder, for he may carry this habit of introspection to such lengths that he may begin to live in fantasy and be unable to adapt himself to reality. His chief preoccupation is with the way in which others regard him rather than with his assessment of those others. In manner he is usually shy and retiring, and he is therefore not as a rule a good mixer or a social lion. Introversion is the characteristic of artists, whatever their medium, and of religious mystics, who find their visions within themselves.

Both these are types which common sense readily recognizes, but that does not make them any more absolute than the types previously discussed. On the contrary, they are merely a broad division of the human family into two huge clans. A single individual may be extroverted in some things and introverted in others; probably great actors show this mixture. Most people, in fact, come between the two classes. Extreme introversion obviously leads to hallucinations and delusions, while extreme extroversion carries with it an almost complete denial of spiritual and intellectual values. When the popular phrase speaks of a war between highbrow and lowbrow, it is really summing up the difference between the extreme patterns of these two types, for the extrovert is concerned only with having a good time at all costs and with little regard for rational control, while the introvert seeks always to retire to a world in which mind and imagination are paramount.

These terms are generally applicable; one may use them of normal people as well as of afflicted ones. But there are other types which are, strictly speaking, confined only to psychiatric use, and these are, as a rule, a little more precise, though even then there are wide variations. To a large extent, these psychiatric types, now to be discussed, have replaced the old conception of psychological illnesses

as determined entities or conditions as unalterable and fixed as a broken leg.

The organic reaction type is one in which the general cause of the mental disorder is some organic or physical disturbance. As a rule these people suffer in their memory and intelligence and the general working of the mind is disturbed. Often there are hallucinations and the peculiar betwixt and between "twilight state".

In the schizophrenic-reaction type we see a more precise state of what has already been described as introversion. The sufferer retires more and more into himself until he may develop a dual personality and all the symptoms of schizophrenia as described earlier. This type is so wide that it has been further divided into sub-classes, but these are of interest chiefly to the professional psychiatrist.

The effective reaction type often shows highly abnormal responses to emotions, and these reactions may be either mental or physical or both together. He is a very moody individual, being now gay, now morose, and these patients usually drift on to the manic-depressive state.

Hysterical reaction types are the victims of disturbing causes almost entirely psychological. They tend towards hypochondria, often without the slightest awareness of so doing, for there is an unconscious belief that some gain may be obtained by the simulation of illness. "Nervous debility" induced by bad or unpleasant working conditions is often an hysterical reaction, by means of which the victim hopes unconsciously to secure release from distasteful conditions.

There is another very curious type—the obsessive-compulsive reaction type—which shows very marked characteristics. The patient feels himself forced to think certain thoughts, perform certain acts, or feel in a certain way, despite all the efforts of his conscious will. He is

aware of the absurdity or even danger of his conduct, but is powerless to control it.

Obviously these classifications have nothing to do with such details of physical build or appearance. They are simply the practical psychiatrist's method of grouping the various symptoms he encounters in his daily work. He does not make the mistake of imagining that because he finds the symptom of one type in a certain individual, all the others will be present; nor does he believe that it is impossible for one person to combine symptoms from two, three, or even more types at one and the same time. It is his primary purpose in diagnosis, in fact, to clear his mind of any such stereotyped ideas, and because modern psychiatry takes this broad and individual view it is making more rapid progress than ever before.

To accept types as absolute, whether they be of normal persons or of disordered states, would be to carry the idea of fixed causation in human affairs to quite unjustified lengths; and indeed there are many who have seen in the attempts to classify human beings in this way something not much different from the mystical teachings of the old astrologers, who believed that the configuration of the stars at birth determined not only a man's destiny but also his physical appearance. "I know by the mole upon your cheek that you were born when Mars was rising," said the astrologer of the past. Today we regard such assertion as nonsense. Yet is it any more logical to say that because a man has long hands and feet he is more likely to see visions than his companion with a short neck? No one scientifically-minded would agree with that proposition.

Types, then, are guides. They are the statement in general terms of some particular worker's experience. Wider experience invariably shows that the exceptions increase; and the more numerous the cases examined the

less conformity to type is found. When Caesar expressed a wish to have about him men that were fat and suspected Cassius because of his lean and hungry look, he was no doubt airing his preference for the pyknic type over the asthenic. But no one would say that he was acting from scientific motives or that his preference was anything more than individual. To accept types as scientifically ordered is to re-establish at once the rule of physiognomy and a host of similar mystic lores.

CHAPTER XII

WHAT IS PERSONALITY?

AS WE HAVE seen in these pages, a good many terms in psychology are ill defined, and the various schools of thought often use the same words with different meanings. The word "complex" as used by Adler when he writes of the inferiority complex is the same to the eye and ear as the word "complex" used by Freud in his famous Oedipus complex; but it does not mean the same thing, nor does it signify what Jung means by a complex. These are matters of detail, though it is high time they were cleared up and a universal terminology agreed upon. But there are other and much more widely used terms which are even less precise; these lead inevitably to endless confusion and discussion.

None is less exact in its meaning or more generally employed than the word "personality". It has no fixed meaning in popular usage and each one of the psychological theories uses it rather differently. To the advertiser of a vacant post in the sales department, personality may mean nothing more than the ability of a man to make himself agreeable to likely customers. To the psychologist it probably signifies everything that goes to make the individual—his ambitions and frustrations, his talents and his weaknesses, his mental instabilities and the particular form they take. Between these extremes are many variations.

Personality in the true psychological sense is probably something much more than popular language assumes. Here is a definition from one dictionary of terms: "The

integrated organization of all the psychological, intellectual, emotional, and physical characteristics of an individual, especially as they are presented to other people". In other words, personality in psychology means the whole being, the sum of the things and attributes that make a person what he is and distinguish him from all other human beings.

It is, therefore, entirely erroneous when an individual is described as having "no personality". Personality is not a part of the human being like an arm or a leg, which can be amputated without destroying his status as a human being. If personality ceases to exist, the person himself is no more. A personality may be "good", "bad", "weak", "strong", just as a man may be these things; but a man is not man without a personality—and indeed many of the higher animals cease to be if there is no personality.

Personality, then, is an elusive characteristic so far as definition is concerned, because so much is included in it. The definition that has been quoted includes physical features, and these are important, yet it is probable that few of us would regard appearance as the most important part of personality. It is overwhelmingly a psychological attribute, something that lies primarily in the region of the mind, which is why it is particularly man's, though it may be echoed faintly by those animals which have a well-developed brain and especially those, like the dog and cat which come daily into close contact with man, though in their case the individuality may be more a reflection of the training they have received than of definite personality.

In dealing with those of disordered mind, an assessment of personality has to be made, and it is one of the most difficult of things to assess with any sort of scientific exactitude, precisely because it is not known exactly what

it is that we want to examine. But there are certain leads giving clues on which the doctor can base his opinion. Best of all are the opinions and statements of friends and relatives and business associates. These people see the individual from the outside and as an integrated working machine. From what they say the psychiatrist can gain a very useful guide to the type of case he has to treat.

From the general point of view the personality traits which are most important in determining the attitude of the individual are those which express his relation to the world outside him. If he is in a tight corner, he may be naturally inclined to fight back and try to find a way out; such people are a great help to a doctor, no matter what his field of work. His opposite is the man who sits down meekly under whatever blow may fall upon him and regard it as the stroke of a fate that should not be opposed. Self-confidence, courage, and initiative, or their absence, are also important points.

Perhaps one of the most vital aspects of personality is the attitude towards authority; so much is summed up in this. The man who is not at all ready to accept another's words for things, who does not automatically obey unless he sees good reason for so doing, is pretty sure to possess also the attributes just listed: self-confidence, courage, and initiative. But there are also people who prefer to lean on others, to whom the mere idea of making up their minds for themselves is distasteful and even frightening. One is not likely to find self-confidence here, nor courage and initiative. The one state or the other provides a most vivid insight into psychological make-up. Many people, of course, fall between the two extremes, and some may push beyond them into anti-social resistance to all authority on the one hand and blind subservience to it on the other. These last are conditions which indicate a

maldeveloped personality probably in need of psychiatric treatment.

Other traits which reappear and which have their direct opposites are those which relate to the freshness and alertness of the mind—as, for example, receptivity to new ideas and “quickness on the uptake”. So, too, with suggestibility—the degree with which an individual may be influenced in his behaviour or outlook by others—venturesomeness, and the like. Aggressiveness and timidity, originality and lack of it, frankness and secretiveness, equable or temperamental: these are a few more contrasted aspects of personality taken from a list that might be extended almost indefinitely.

Personality is a descriptive term rather than an ideal condition. No one can say what is the perfect personality; all he can do is to describe what he finds. Personality is also the resultant of many conflicting forces. A man may be frank in some things and secretive in others, aggressive over some parts of his life and surprisingly easy-going about others. It is the sum of all these things that matters. When a salesman is described as being a first-class personality it means, most likely, that he is an aggressive and persuasive fellow; but a psychiatrist might not take a similarly favourable view of his personality as a whole.

Disturbances of personality are among the surer guides to incipient mental disorder. A man begins to behave and react differently from his established habits, at first in small things and then in larger and more important ones. He may start to be fearful of events that never disturbed him before. These are the first pointers to oncoming disorder, just as the small pain in the body is the first messenger of trouble on its way. For this reason it is often his friends that are first aware of a sufferer's developing mental trouble. Personality is something seen from the

outside and not from within. Often, when talking to friends, the psychiatrist is told that the patient began to behave "a little queerly" months before. This is what the psychologist calls the "breakdown" or "disturbance" of personality, and the form it takes, as we have seen, determines to a great extent the course that treatment must follow.

Because an assessment of personality is of such importance in psychiatry and, indeed, psychology generally, efforts have been made to devise personality tests that might yield some form of data on which a more or less exact estimate could be based. The only really practical method open to the psychiatrist is to put his patient in a ward and keep him under skilled observation continuously. Even then the results are not really true to life, for the whole conditions are artificial, and the patient is not subject to the same stimuli as are provided in the normal world of affairs. There are, in addition, various so-called personality tests, such as those introduced by Rorschach and Murray respectively. In the first, the tested individual is given ink blots to interpret; in the latter he is asked to give his reading of various pictures. Both tests are based on the idea that the interpretations will be determined by the general outlook of the patient. Success with these tests is, however, almost entirely dependent upon the skill and experience of the examiner, and results equally valuable could probably be obtained automatically in the course of the usual interview. In fact, data gained in the latter way might be more informative since it would be unconsciously given.

Each of the many theories of psychology seeks to explain how the mind works and how it grows disordered; in other words to describe how each individual reacts. Each school has, therefore, its own particular explanation of personality. None can be said so far to offer anything.

like an ideal theory, but it is interesting to examine some of them.

Freud's whole system is based on the fundamental conception of individuality. Though each act and thought of the individual is conditioned by some mental cause which has preceded it, the general reactions, according to him, are capable of formulation into a consistent scheme. By that he means that though the individual expression is unique, the basic operative factors are the same for all. From this it follows very clearly that the psychoanalysts regard character and personality as—to quote Dr. A. A. Brill, the well-known American authority on psychoanalysis—“. . . nothing but the sum of his past impressions . . .” The same writer goes on to say that these are impressions of all kinds. Not only are the obvious ones of the external environment powerful factors, but also those which arise from within play a powerful part. Chronic indigestion is as much a factor in moulding personality as, for instance, the particular type of school a boy attends.

This is, on the face of it, a superficial view that is self-evident, but it is carried to great lengths by the psychoanalysts, who find the chief causes of personality a long way back in childhood, and in this sense it forms a foundation stone of their theories. There can be no doubt that the theory does present a very broad view of one aspect of the truth.

On the other hand, the purely mechanistic psychology sees in personality merely a variant of a universal pattern of response. The theory is that the brain and mind work through the medium of the conditioned reflex and association. An individual learns by experience to react in a certain way in certain circumstances, and after some practice does so automatically. In the human mind, however, there are many thousands of such reflexes and

each is capable of being modified to a greater or smaller extent by some or all of the others. Coupled with this is a power of inhibition not possessed by lower animals. Hence the human response is varied and variable.

In this way personality, character and individuality are seen to be simply one of the many mathematically possible patterns of behaviour inherent in the human brain. No two individuals—not even brothers brought up in the same family—go through quite the same experiences as they grow up. Thus the formative forces at work on the mind differ with each and every individual. This, combined with the untold combination of response among the thousands of cells and nerve tracks in the mind, yields a unique result for each individual, and that result is his personality. There is nothing in this theory which makes it *impossible* for two people in the world to be exactly alike in personality; it merely states, like modern physical theories, that such similarity is so highly improbable mathematically that its occurrence may be ruled out for practical affairs.

Here, then, are two explanations which seem mutually exclusive, yet on closer examination they are seen not to be so. Once again Freud describes how, and the mechanistic theories concern themselves with why. Freud's theory shows the quality of the thing produced; the mechanist's describes the machine behind it all. There are dangers and rather questionable assumptions in both theories, which may lead in time to reconciliation as the basis of further advance.

It is to be noted that even Freud's explanation of personality, which is so often held to be unscientific by those whose sole approach to the infinite problem of man lies through the laboratory and not the consulting-room, takes full cognizance of the effect of physical factors. This is important, for it is clear to everyone who has thought

about the subject that personality depends to a great degree on heredity and allied factors. It is an accepted fact of psychiatry that certain conditions tend to run in certain families. The son of a schizophrenic is likely to develop schizophrenia if he suffers mental disorder—and so on. Like so many problems in human behaviour, there is some doubt here whether these tendencies are hereditary in the strict sense—that is to say, due to the physical mechanism of inheritance in the same way as eye colour—or to early surroundings. Is a tendency to hysteria, for example, the result of a particular gene—the unit of inheritance from mother or father—or due to early impressions made on the plastic mind of the child by hysterical behaviour of the mother or father? It is the old question of nature or nurture, of original sin or innocence.

Upholders of psychoanalysis would probably tend more towards the view that it was early upbringing and experience that plays at least the chief part, if not the only one. Mechanists are more inclined towards the theory of inheritance. As elsewhere the truth is most likely midway between these theories. One need not take the somewhat pessimistic fatalistic view that all our shortcomings reach us from our parents and are beyond correction, nor need we accept the optimistic hope that by proper upbringing, every child may be made to grow up into a perfect adult with no mental defects or weaknesses.

Playing a big part in the formation of character are the endocrine glands: the thyroid, adrenals, and so on. Greater or less activity of these does undoubtedly very seriously modify the mentality and outlook of each individual, and as was shown in *Secrets of the Human Glands*, conditions very closely similar to purely psychological disorders can be produced by glandular disturbance. This is an important point to which even the most

recent books on psychological medicine do not give the weight it deserves. That the glands do influence personality in a profound way cannot be doubted.

There are, therefore, very many theories of personality. Only three of them have been glanced at here, and they indicate, as it were, the upper and lower limits between which are very many steps. The psychoanalytic theory is almost entirely environmental; given such and such surroundings certain aspects of personality will develop. But it does not deny a physical factor, for it admits that the internal activities of the body, though automatic and unconscious, are operative in a powerful way.

On the other hand, the mechanists see in personality almost entirely the working of a mathematical probability system. But here again there is a door left open for less fatalistic views. Obviously the forces of experience which condition the reflexes are not blind forces like gravity or magnetism. They can, on the contrary, be controlled and changed, particularly by those responsible for a child's upbringing. So, here again, the importance of wise upbringing is brought into the picture. The mechanistic explanation is not so mechanical as its proposers would have us believe.

If personality itself is incapable of precise definition, and if no existing theory accounts completely for its formation, it is, none the less, something which is recognized by almost every one of us. In brief, it is Man. The infinite variety of man is the result of the many obscure forces that work within and without him, and it is as well that those forces should not be brought under strict control. For, if science laid down a method of personality formation according to formula, the world would be inevitably the poorer. What scheme of personality control would make allowances for genius? Standardization invariably produces an efficient mediocrity. More than

that, it has been shown over and over again that the qualities of genius and those of mental disorder are not very far apart. The vision of the artist, whether in music or words or paint, are different only in degree and not in kind from those of the schizophrenic.

CHAPTER XIII

BEYOND THE MIND

STUDY of the human mind, whether in health or disease, brings forth facts ever more astonishing and curious. To many it seems utterly beyond rational credence that such typically human abilities as imagination and artistic creation should be due to either purely mechanistic schemes, on the one hand, or to childhood experiences, mainly of a sexual nature, on the other. Man's mind has powers which are not possessed by any of the other animals, and it is surely, even in this materialist age, not illogical to feel that they represent at least some new development of life rather than a refinement and development of the mental equipment of other animals.

This, of course, is a very old point of view, but so far modern psychology has done little to dismiss it. The idea that the specifically human mental qualities derive from some unknown force, whether divine or otherwise, is prehistoric, so far as we can judge; certainly it appears in the oldest civilizations of which we have record. And even modern scientific psychologies do not get far from it, though they may state it in different terms. One has only to read Jung's work to realize this. He is a great practising physician, yet he argues that man possesses a soul and he postulates a group unconscious which is entirely at variance with any sort of theory the purely mechanical theories can provide.

It is difficult enough to provide a reasonable explanation of the mind at work in everyday affairs. Still more so when the mind is in disarray. None of the psychologies tells us why a schizophrenic of no artistic talent should suddenly

begin to draw symbolic pictures of a merit at least equal to certain productions of the so-called modernist painters. It is true that psychoanalysis purports to tell us why the symbolism is what it is: why one man should draw spires and eyes, while others prefer fanciful and unreal animals. But it does not really explain why the activity should take place at all. Moreover, though it has developed a useful theory of what happens in dreams, it still begs the question of why man should dream at all.

But this is by no means the end of the story. The normal activities of the mind in the widest sense, from the automatic act of walking to the writing of plays and the painting of pictures do not exhaust the apparent possibilities of mind, and so far these other activities have been somewhat ignored by the psychologists as a whole.

There are all manner of mental activities which do not fit into the scheme of things as seen by the general theories of psychology. These are the ones included in what have come to be known as "extra-sensory phenomena". Many stories of supernatural experiences are due to hallucinations and delusions of a kind with which the psychiatrist is very familiar in schizophrenia and similar states. Beyond these are others that cannot be explained away by reference to the behaviour of the mind in disorder.

Psychic research has been in being now for very many years, and it is a branch of activity that has been very prominent in this country. Its lessons have been instructive, and they have left over a residuum of events and experiences which ordinary explanations cannot touch. The world of psychic research bodies has, however, not been on strictly scientific grounds. Its methods have often been scientific enough, but it has not begun at the beginning. The work of mediums, haunted houses, poltergeists, and so on, have been investigated; in many cases the application of strict control has shown them to be frauds or

unconscious self-deception. So far the work done has been valuable. But it has had no sure foundation.

The resources of the human mind are to a large extent unknown. The psychiatrist, dealing with a case of what he thinks is a thoroughly familiar kind, is often surprised by the appearance of some feature that is entirely new. Each mind, to some extent, seems to be a law unto itself. When so much is thus in doubt, it is useless to seek explanations of "physic" phenomena in theories of spirits and the like. We cannot scientifically accept the introduction of new forces (or beings) until we have shown that the phenomena under discussion can be due to no other cause.

It is for this reason that in various parts of the world a number of scientists have been investigating on the strictest classical lines the potentialities of mind in directions hitherto unexplored. To these experiments the name of "extra-sensory experience" or "supranormal activity" has been given. They often seem childish to the uninstructed and to those who are quick to seize upon the apparently ridiculous, as the writers of satirical columns in the newspapers show. But it is necessary to begin at the beginning. No doubt when Galileo began to drop stones from the leaning tower of Pisa his efforts were regarded as childish. Everyone knew that stones dropped to the ground. Why experiment? From his work came the Laws of Motion, and from them the great mechanical inventions of the seventeenth, eighteenth and nineteenth centuries.

These experiments are directed towards finding out whether the possession of hitherto unrecognized means of perception is a feature of the human mind. The data provided by psychical research suggested that there was something to explain. The new researches are designed to show how far, if at all, these abnormal-appearing phenomena are in fact normal.

One of the most interesting series of experiments was that carried out by Professor Rhine of the John Hopkins University in America. On the face of it, these experiments looked absurd enough. He designed a new pack of playing cards with simple devices upon them, and his aim was to see whether individuals could "see" these devices before the cards were turned face upwards. He began the experiments in a sceptical frame of mind, and devised them in accordance with the modern principles of statistics (the theory of probability and averages) by means of which the mechanism of the Universe has been much elucidated.

If a pack of such cards is turned up one by one while another person is asked to name the nature of the next card due, the "guesser" will be right in a certain number of cases by the operation of the laws of chance. If there were only two devices on the cards, there is no reason why he should not be as often right as wrong. The chances can be worked out for other numbers of devices.

Right from the first Professor Rhine, who invented the phrase "extrasensory perception", found that there were certain people whose proportion of correct prophecies was far larger than it should have been by chance. Continued experiment confirmed this view, and revised techniques did nothing to break down the first suggestion that certain people possessed the ability to see, as it has been picturesquely put, "an event before it has happened". A large number of people were tested in this way. Some showed that they did not possess this ability, if there were such an ability; but the number of others did most certainly indicate that there was a possibility of extrasensory perception—that is to say, seeing things without the use of the so-called normal senses.

Since Rhine's first experiments, which were described in 1935 and amplified in 1938, many other workers have

investigated the problem on similar lines, and new and improved techniques have been introduced. The evidence grows that there is at least one potentiality of the human mind of which not one of the many current psychological theories takes account. There is a clear case for continued experiment on these lines, and if the case is made out for extra-sensory perception and no basic fallacy is revealed, it is clear that a good many of our ideas on the mind will have to be radically recast.

In these experiments the event to be predicted has been a simple one, for the very reason that faltering steps were being taken into unexplored territory, and the person predicting them was present in the room where they occurred. There was a chance that the individual might be a receptor of subtle electrical impulses or the like of very short wave length. Scientific controls showed that this was not so.

From these experiments, it was natural to turn attention to the closely allied one of telepathy. The belief in telepathy, or the ability of mind to communicate with mind at a distance, has been held for a long time, and the original investigation of the Psychical Research Associations showed that there was at least something to explain after the usual crop of fancy had been cleared away. Obviously, if a person could "see" the hidden in a room, he might be able to do so at a greater distance.

Rhine himself carried out some experiments to indicate whether this were possible, and at first his findings were more negative than positive. But others since have taken up the subject on similar lines, under the closest scientific control, and there is now a fairly general, though qualified, acceptance of the view that some form of long-distance communication between minds is at least possible in certain circumstances.

These are not the results of demonstrations carried out

in hysterical conditions by spiritualists or those who wish to prove the existence of forces beyond the normal range. They are the findings of experiments carried out under conditions of close control by trained scientific observers, who put forward their conclusions as tentative only, and who would welcome criticism. There is nothing final, perhaps, but there is something highly interesting and suggestive about it all.

The main argument against the findings is that the results are so variable. It is difficult, as yet, to forecast results or to repeat an individual experiment. The bulk of the experiments yield negative results, and it is only with certain people that any success at all is gained.

But this does not invalidate the experiments, as some critics try to assert that it does. These are the first attempts at really basic investigation of a field that has hitherto received little attention from scientists, who have been all too ready to dismiss the whole business as "superstition".

So far, to indicate one difficulty which it must be the aim of experiment to clear up, the conditions for success have not been discovered; and it must be remembered that a negative cannot be proved. If a large number of experiments with pieces of metal were carried out and only one piece were found to show magnetic properties, that would be no argument that the idea of magnetism arose from some fallacy or was some exceptional freak. It might be that that was the only piece of iron in the collection. Hence, as soon as further experiment showed that only iron could be magnetized, the conditions of success would be established, and a true study of magnetism could be begun.

So, clearly, it must be with extra-sensory perception. At the moment all sorts of subjects are being tried—that is to say, all kinds of minds. Some show 'promise, others

do not. Those which do not may be analogous to the brass and copper in our imagined collection of metals. The successful ones are the iron. What has to be discovered is whether this "iron" is a fairly common constituent of mental activity, and it is not until then that a really concerted attack on the problem can be made. That we are at the moment ignorant of conditions does not mean that we shall always be.

Beyond these problems there are very many that arise from psychic research, but they are much more complicated, and it is not until the ground has been cleared that any approach can be made to them in any scientific spirit. The many phenomena of spiritualism, so glibly ascribed to "non-terrestrial entities", may be merely projections of mental activity of a kind with which we are not yet acquainted.

Some work has been done on these lines. The phenomena of automatic writing and of speaking in strange languages has been investigated by Jung and his Zurich school, and most if not all of the known examples seem capable of explanation on psychological theory; and so with other forms of psychic experience, such as apparitions and materializations. The case of the poltergeist, to which so much attention has been given recently, is more the province of the physicist than the psychologist.

These brief paragraphs are not intended to be propaganda for a belief in uncanny happenings. They are put forward to show that the limits and potentialities of the mind are by no means even remotely known yet, and any theory of psychology which seeks, in the present state of knowledge, to present a complete picture of the mental mechanism must, therefore, be suspected of making extravagant claims. One cannot explain or even describe the workings of a motor car simply by examining and analysing the gearbox and back axle.

The main point is that attention is now being directed scientifically to the problems involved, and that a start has been made at the foundation level. The next few years should be productive of results that might if extra-sensory perception is put beyond doubt, revolutionize psychology even more drastically than Freud did half a century ago. For if the mind is open to stimuli that do not come through the accepted senses of sight and touch and smell and hearing, and if mind is capable of reacting with other minds at a distance (it seems to do so in hypnosis), then quite new factors may be seen to be present in mental disorder and in normal mental behaviour. The prospect is fascinating and immense—and not without its suggestions of dangers and vast problems.

CHAPTER XIV

TODAY AND TOMORROW

THE TIME has come to close this brief survey of the mind at work in health and disease with a quick retrospect of the country passed through. It has been a journey notable for the diversity of its scenery, which often enough has been of a frightening and depressing kind, and, unfortunately, no clear picture emerges from the view.

Psychology is today only partly a science. It has not yet thrown off the ties that bind it to philosophies that owe little or nothing to scientific method. Until the late nineteenth century, the study of the mind was the province of the speculative philosopher whose nearest approach to scientific experiment was introspection, or self-observation. The result was that to a large extent all psychologies were a mere projection of the particular thinker's own personality. Because he believed he thought in a particular way, he asserted that all men did.

The perfection of brain surgery and the development of neurological and physiological studies brought into existence a purely mechanical school of thought. This saw the brain entirely as a machine, working in exactly the same way as any animal's brain, from which it differed only in degree. This yielded valuable but far from perfect results. The delicate products of the human mind were like flowers torn to pieces with a pair of fitter's pliers. The way the thing was put together was revealed, but it still did not show how it worked or why it worked. Freud introduced new conceptions that aroused controversy and subsequently passed largely into current thought, though

with modifications, and that have undoubtedly reoriented the whole conception of psychology. Today not only are these lines being assiduously followed, but also new thrusts are being made into unexplored territory through the work of Rhine and others in extra-sensory perception.

The difficulty about dealing with the brain and the mind is that it is almost impossible to adopt the purely scientific approach. The brain is not a very amenable subject of laboratory experiment, and such experiments as are devised have small general application. It is impossible to say that because one or two or even a hundred minds will react in a certain way, all mankind will do so. That is the difference between the mind and the purely mechanical parts of the body. Each brain is unique.

The mechanists see this variability as due to particular combinations selected from many millions of possibilities. The psychoanalysts see it as the mere product of experience. This is merely saying the same thing in a different way. Indeed, that is the chief difference, on a final examination, between the two schools, which openly are at daggers drawn. All too often the things in which they most appear to differ are merely approaches to the same phenomenon from a different angle. The psychoanalyst talks of the force of the id and the work of repression; the mechanist talks of nerve energy, which he cannot define.

One of the most hopeful promises of the future is that these two attitudes will be brought into agreement and that the whole body of psychology may then move forward in unison. In all probability it will then be seen that each, within its province, has been right, and that disagreements have been due to misconceptions of the role each was playing. A theory of nerve operation may explain the actual operation of the mind; a developed theory

of the unconscious may explain why it is each mind uses that mechanism differently. There is no fundamental mutual exclusiveness between the two, and those who think so are tilting at windmills.

It has been impossible in these few pages to do more than fill in the outlines of modern mind theories, for the subject is a vast one. The only practicable course has been to stress that where there are many ways of thought, the full truth has not yet been found. Jung, regarded as one of the stormy petrels of psychology, has himself stressed this, when he says: "When we find the most diverse remedies prescribed in a textbook of pathology for a given disease, we may confidently assume that none of these remedies is particularly efficacious." It is a wise thought, which enthusiastic upholders of isms might do well to ponder.

The only way to gain a full insight into modern psychology from the scientific angle is to read the works devoted to it in its various aspects. That, of course, is a large order, for almost every month seems to produce some new book. A brief indication of some sources of wider reading may, therefore, be helpful.

So far as the neurology and physiology of the brain go, there is no more complete approach than Professor R. J. A. Berry's *Your Brain and Its Story*. Prof. Berry is a staunch upholder of mechanistic views, but his book is scientifically accurate and easy reading.

It is difficult to point to sound guides through the dense jungle of psychoanalysis, of which so much has been written. The basis must be sought in Freud's own works, of which *The Interpretation of Dreams*, *The Psychopathology of Everyday Life*, *Three Contributions to the Theory of Sex*, and the *New Introductory Lectures*, are probably the most important. But much of Freud's writings is obscure, and he mixes his speculative theories freely with his scientific findings. To

overcome this one may turn to the works of his expositors, notably A. A. Brill and E. Jones. Brill's *Psychoanalysis*, though published in 1922, remains one of the very best introductions to the subject. Those who wish to obtain a complete view on the subject, and to have its theory disentangled from its practice can find nothing better than *Psychoanalytical Method and The Doctrine of Freud*, by Rolan d'Albiez. It is in two volumes and is the work of a philosopher who is not a psychoanalyst—a fact which makes it all the more valuable. An admirable introduction to the methods of modern psychiatry is *Psychological Medicine* by Desmond Curran and Eric Guttman, which besides being extremely lucid, unlike so many psychiatric works, has the additional merit of being right up to date. The writings of Jung and Adler may also be studied for their particular outlooks, Jung's *Modern Man in Search of a Soul* being particularly illuminating on his philosophical approach.

But the average person is not concerned with the theoretical details and controversies. He wants to know how and when modern psychology can help in his ordinary affairs. Here one steps out from the shadows of doubt into a more certain light. For the distressed mind, modern psychiatry has a great deal to offer. It not only claims to cure; it does cure. This is a case in which, as in medicine itself, practice far outstrips theory. The psychiatrist is not so much concerned with the reasons for things; he draws upon everything in his primary purpose of restoring balance to distressed minds and brings relief to those in mental affliction, which in many ways is more terrible than physical suffering.

Recent years have stressed over and over again the importance of psychological causes in disorders of the human being, and many cases that in the past would have been treated by the physician are now referred to

the psychiatrist. The war and its problems especially have emphasized how important psychological medicine is under modern conditions, and the coming years of reconstructions, when frustration and, it may be, hardship will continue, will bring that point out even more fully. The medical profession today is more fully alive to the importance of psychiatry than ever before.

There is a need for a greater accent to be laid on psychiatric training for the general physician. The war brought out the shortage of trained psychiatrists and showed that even now the newly qualified doctor is not too well informed on psychological matters. This is something which should be remedied in the coming years.

A need also exists for linking psychiatry more closely with other medical research, for it is impossible to consider the physical man and the psychological man as two entities existing apart. The mind reacts on the body and the body on the mind. The human being is an integration of all that goes to compose him, and any attempt to split him into separate watertight compartments can lead only to error and disaster.

So much for the medical side. How does modern psychology help in the normal affairs of life? The answer is that there is scarcely a department of life which it does not touch.

Modern education owes a great deal to psychology. There are today scientific intelligence tests which, if properly and universally applied, can do much to give us a better educated and better adjusted population. It has solved to a large extent the problem of the "difficult child". In the home, the mother unconsciously draws upon the teachings of psychology in her upbringing of the child.

In later years occupational psychology can avoid the disaster of attempting to fit square pegs into round holes.

It can find out the aptitudes of candidates for employment and point out the paths most profitable for young people to follow for their livelihood. It is helping to break down the old snobbish attitude that to wield a pen is more respectable than to be a good craftsman.

Industrial psychology is creating better conditions for the worker.

It is reducing the accident rate in factories, breaking down the monotony of repetition processes, and insisting on the provision of surroundings that ensure healthy minds no less than efficient bodies.

The importance of psychology in all its branches cannot be overrated. It is the science of the human mind—and it is the mind which makes Man. Until all its secrets are revealed, psychology must make many blunders, follow many false paths, but already some of the main landmarks have been charted and it is possible to hold a straighter course than before. There is much to learn; that must never be forgotten. Theories that shock and astonish today may one day be seen for the trivial things they are. But the work is going on all the time. One by one the brain and mind are yielding up their secrets so that man may understand himself and fulfil his destiny.

There is no royal road to progress. Questions of value must not be allowed to intervene. Some have seen in the human mind a new step in evolution, and therein may be the cause of the confusion in psychology, because it may be that new forces are at work—forces which cannot be explained by the principles that have hitherto ruled the development of the animal system. Some psychologists and those who work in extra-sensory perception believe this.

The actual details do not matter. The main point is that man today recognizes the importance of a study of

mind, and is busily at work on it. He may find the truth here, there, or anywhere; but in time he will come to it; and when he does most of the troubles of man, which arise within him and drive him to courses such as war which are against his whole nature, will vanish.

EPILOGUE

THIS BOOK—the last of a series—is a farewell to my readers and my one hope is that they did not find it disappointing. The layman has been introduced to the wonderful workings of the human brain; its secrets and its history have been laid bare in as simple a form as possible. One thing I hope is that no reader will try to psychoanalyse himself or his friends, because I agree with my medical colleagues that “A little knowledge is dangerous knowledge,” but I do assert that a little knowledge well implanted will prompt the individual to seek better qualified advice whenever one of his organs does not function as it should.

Every day we discover new ideas of the mind and we know now that many physical diseases have an underlying cause in the mind. Perhaps this book will help some to overcome an inferiority complex; others to know that their glands are perhaps responsible for some sexual perversion of which they are ashamed. Nothing in the working of the human body is shameful. Nature is known to be very sparing and never over-generous, so whatever organs she has bestowed on us, they are there for a definite purpose. The line dividing genius from madness is often so fine that it is hardly perceptible. On the other hand, hysteria, neurosis, religious mania, etc., have been proved to be caused by the overworking of some organ or by man's ability being directed into wrong channels. The reasons for man's behaviour and other problems have prompted this book, and let us hope

that the work has not been in vain, that the readers and laymen, whose well-being prompts every doctor's heart, have profited by it. Even if one in a thousand has derived a little pleasure or help, or even some slight entertainment, it is worth any author's effort.

INDEX

A

Abreaction, 85
 Adler, 75, 114, 129, 140, 145, 166
 d'Albierz, Rolan, 121, 166
 Analytical psychology, 112
 Andreas à Croix, 63
 Aphasia, 67
 Aristotle, 63
 Asthenic type, the, 138
 Athletic type, the, 139

B

Berry, R. J. A., 71, 72, 79, 165
 Brain evolution, 15
 Brain surgery, 60
 Breuer, Joseph, 83, 96, 109
 Brill, A. A., 150, 166

C

Catharsis, 85
 Cerebrum, the, 28
 Charcot, 84
 Chauliac, 63
 Classification of types, 138
 Concussion, 69
 Cortex, the, 30
 Curran, Desmond, 71, 76, 166

D

Darwin, 73
 Death-wish, the, 111
 Dreams, 88

E

E.C.T., 55
 Ego, the, 110
 Ellis, Havelock, 11
 Endocrine glands, 152
 Epilepsy, 47
 Extrasensory perception, 158
 Extroverts, 140

F

France, Anatole, 9
 Freud, Sigmund, 10, 19, 23, 71, 76, 78, 82, 84, 96, 100, 108, 120, 123, 145, 150, 163

G

Galileo, 72, 74, 157
 General Paralysis of the Insane (G.P.I.) 56
 Guttman, Eric, 71, 76, 166

H

Heredity, 152
 Hippocrates, 62
 Homosexuality, 92
 Horney, Karen, 129
 Hunter, John, 64
 Huxley, Aldous, 138
 Hypnosis, 85

I

Id, the, 110
 Industrial psychology, 134, 168
 Inferiority complex, 114
 Insulin treatment, 55
 Introverts, 140

J

Janet, 84
 Jones, E., 166
 Jung, 75, 91, 112, 128, 138, 145, 155

K

Kleptomania, 49
 Kretschmer, 138

L

Lister, 64, 72

M

Mental disease, 39
 Morton, 72
 Murray, 149

N

Nazism, 135
 Nervous system, 26
 Neurosis, 113, 128
 Normal minds, 123

O

Oedipus complex, 92, 116

P

Paranoia, 51
 Paré, Ambroise, 63
 Pasteur, Louis, 64, 72
 Personality, 145
 Petit, 64
 Philip of Nassau, 64
 Phrenology, 34
 Pott, Percival, 64
 Psychiatry, 42, 51, 79
 Psychoanalysis, 79, 82, 96
 Pyknic type, 139
 Pyromania, 49

R

Rank, Otto, 75, 115
 Rhine, Prof., 158, 164

Rorschach, 149
 Rousseau, 130
 Rupert, Prince, 63

S

Schizophrenia, 51, 69, 109
 Shock therapy, 55
 Simpson, J. Young, 72
 Spinal system, 27
 Spiritualism, 161
 Strauss, E. B., 107
 Subconscious, the, 110
 Sublimation, 130
 Super-ego, the, 110

T

Telepathy, 37, 159
 Thalamus, 29
 Trephining, 60

U

Unconscious, the, 110, 123

W

Wagner-Jauregg treatment, 58
 Wallace, 73

